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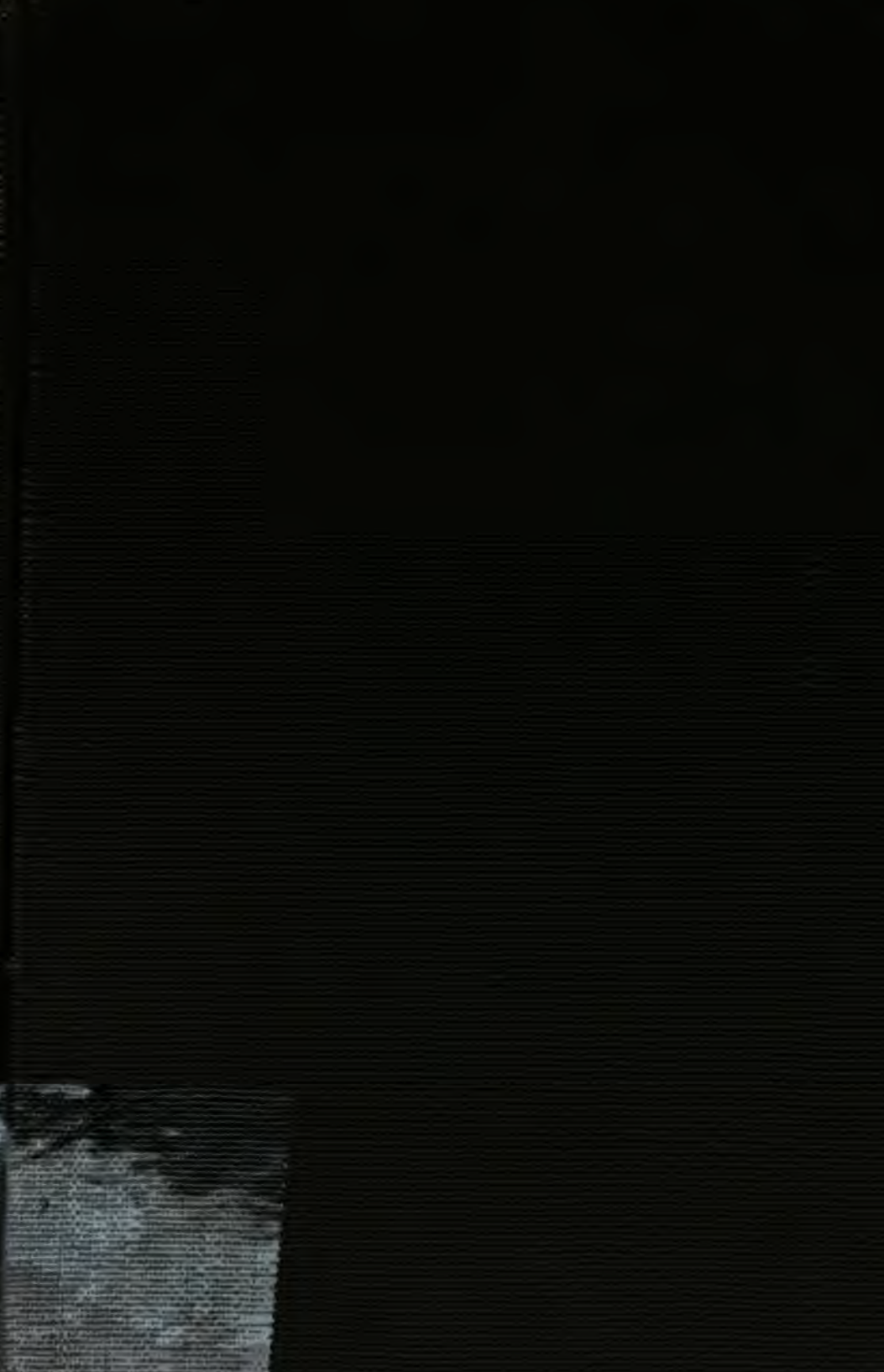
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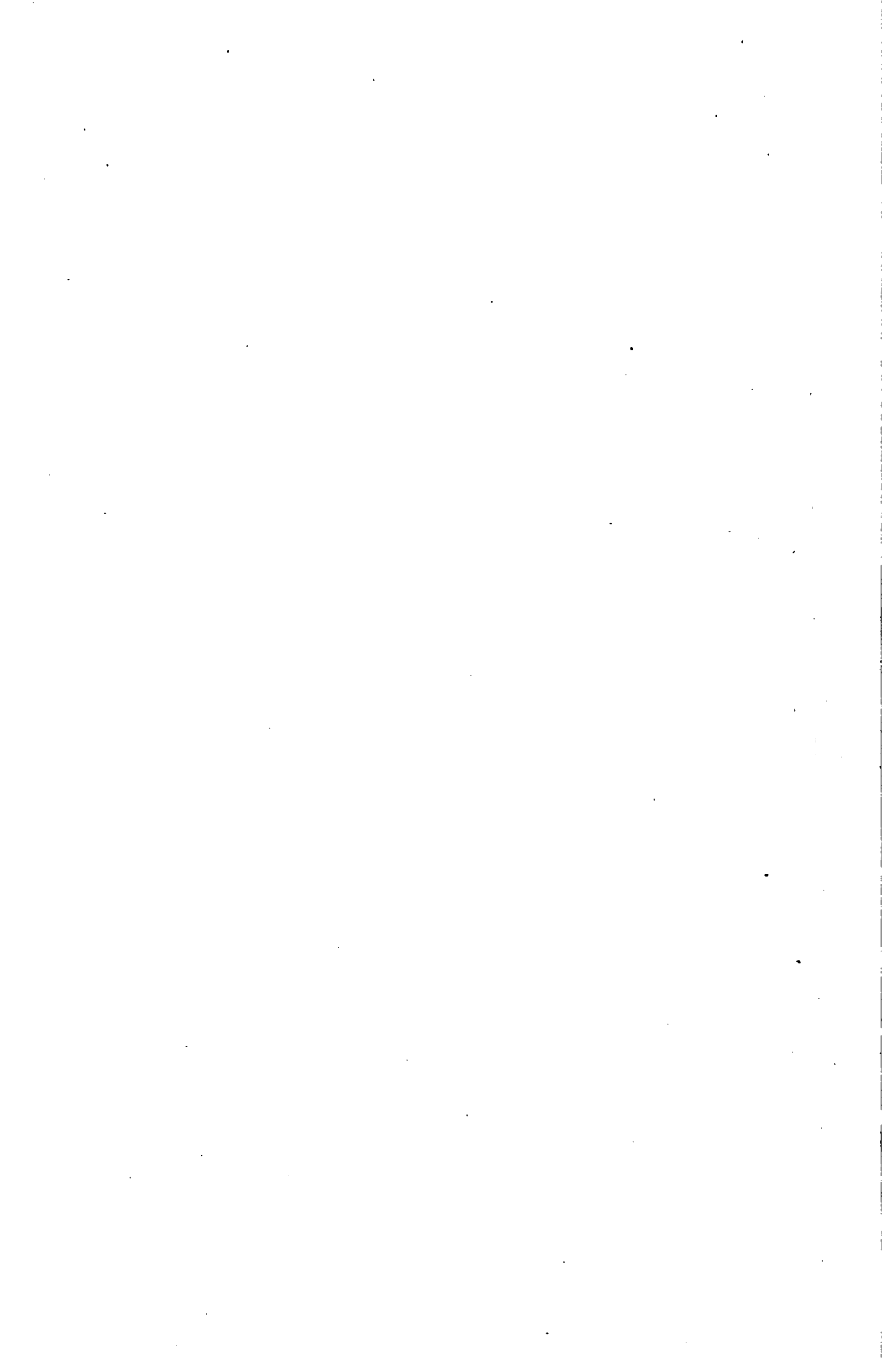
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16
FOURTEENTH ANNUAL REPORT

OF THE

**Wisconsin
Agricultural Experiment Association**

With Fourth Annual Report of

ALFALFA ORDER

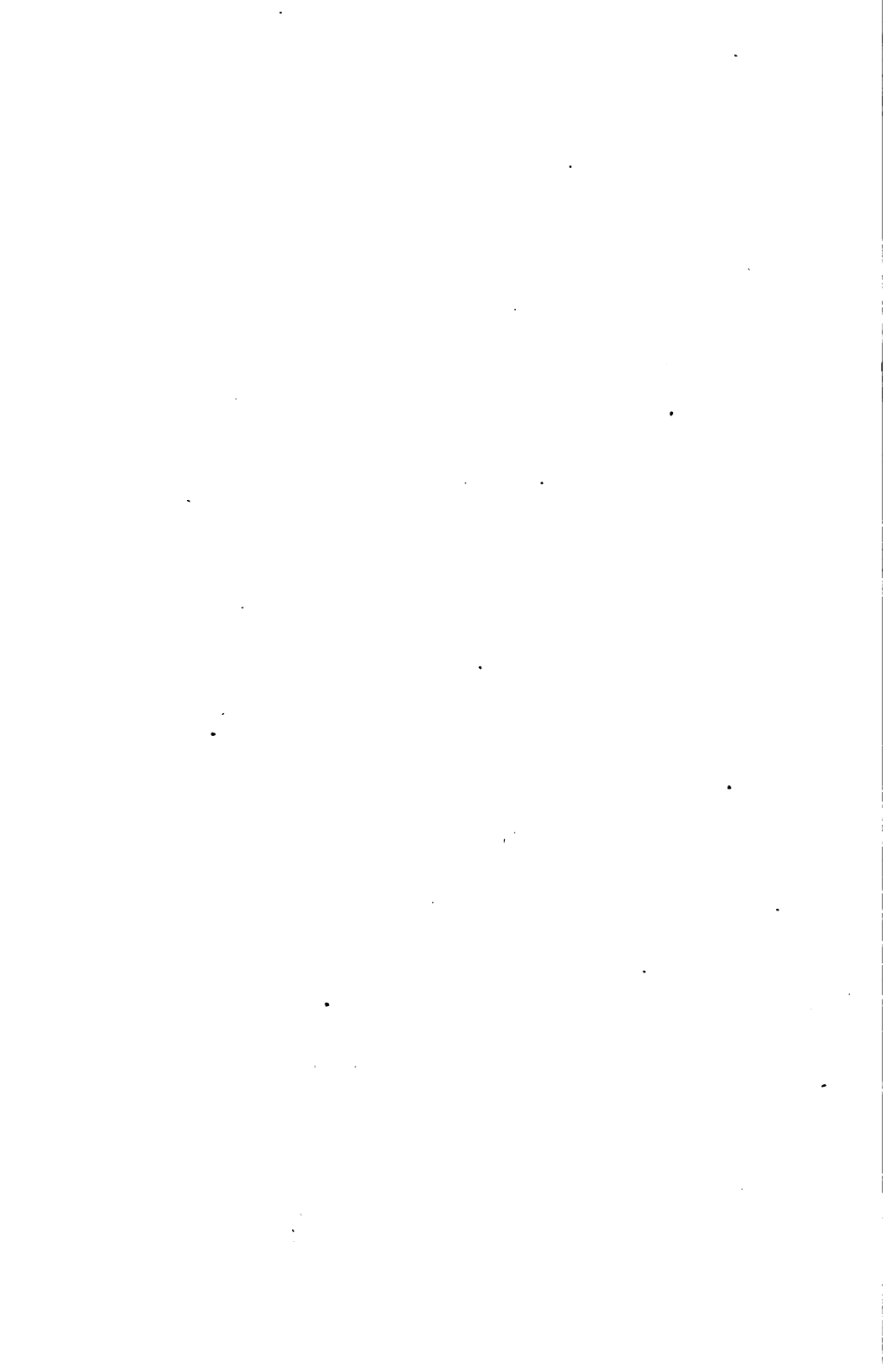
**ADDRESS OF PRESIDENT, SECRETARY'S REPORT WITH PAPERS
AND ADDRESSES GIVEN BY MEMBERS OF THE
ASSOCIATION AND OTHERS INTERESTED
IN PROGRESSIVE AGRICULTURE**

COMPILED BY

R. A. MOORE, *Secretary*



**MADISON, WIS.
CANTWELL PRINTING CO., STATE PRINTER
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LETTER OF TRANSMITTAL

WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION.

MADISON, WIS., 1916.

To His Excellency, EMANUEL L. PHILIPP,

Governor of the State of Wisconsin:

Sir—I have the honor to submit for publication, as provided by law, the Fourteenth Annual Report of the Wisconsin Agricultural Experiment Association, showing the receipts and disbursements the past year, also outlines for experiments, and addresses and discussions given at the annual meeting at Madison, February 11, 12, 1916.

Respectfully submitted,

R. A. MOORE,

Secretary.

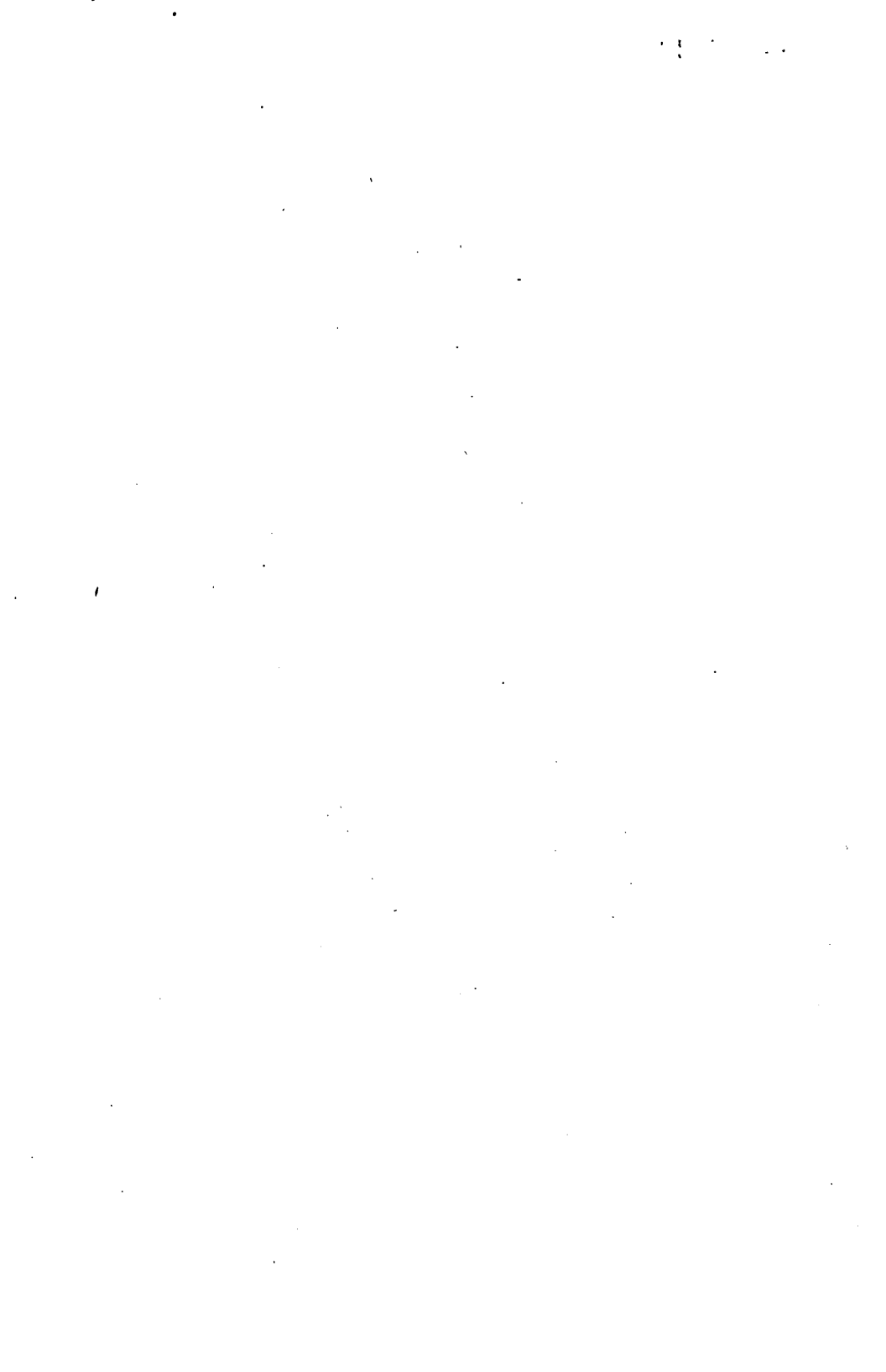


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OFFICERS, 1916

President.....	HENRY MICHELS, Malone
Vice President.....	J. R. THORPE, Tavera
Secretary.....	R. A. MOORE, Madison
Asst. to the Sec'y.....	J. J. GARLAND, Madison
Treasurer.....	H. E. KRUEGER, Beaver Dam
Clerk and Stenographer.....	CLARA BRABANT

COMMITTEES

Executive:

Geo. W. Davies.....	North Freedom
T. R. Thorpe.....	Tavera
A. L. Stone.....	Madison
Jesse Van Natta.....	Dodgeville
Frank Bell.....	Columbus
Officers of Association, Ex officio:	

Resolutions:

J. B. Cheesman.....	Racine
C. P. Norgord.....	Madison
H. E. Krueger.....	Beaver Dam

Finance:

C. P. Norgord.....	Madison
H. N. Longley.....	Dousman
H. E. Krueger.....	Beaver Dam

Coöperative Experiments:

Farm Crops.....	R. A. Moore
Soils.....	A. R. Whitson
Farm Engineering.....	F. M. White
Agricultural Chemistry.....	E. B. Hart
Agricultural Extension.....	K. L. Hatch
Farm Management.....	D. H. Otis

Article VI.—Duties of Officers.

Section I. It shall be the duty of the president to preside at all meetings of the society and enforce the observance of such rules and regulations as will be for the best interest of the organization; to appoint all regular committees as he may deem expedient for the welfare of the association.

Section II. In the absence of the president, the vice president shall preside and perform all duties of the president.

Section III. It shall be the duty of the secretary to keep all records of the association; to report the results of all coöperative experiments carried on by its membership and the experiment station, plan the experimental work for the members of the association, and labor for the welfare of the society in general.

Section IV. The treasurer shall collect fees, keep secure all funds of the association and pay out money on the written order of the secretary, signed by the president. He shall furnish bonds in the sum of two thousand dollars with two sureties, for the faithful performance of his duties.

Article VII.—Amendments.

This constitution may be amended at any annual meeting by a two-thirds vote of the members of the association present.

Amendment No. 1.—Adopted Feb. 9, 1906.

Any person residing within the state having completed a course in agriculture in any college equivalent to that given by the Wisconsin University, may become a member of this association under the same regulations as students from the Wisconsin College of Agriculture.

Amendment No. 2.—Adopted Feb. 11, 1909.

Any County Agricultural School within the state may be admitted to membership of the Experiment Association upon request by the principal of such school and the payment of an annual fee of \$1.00.

BY-LAWS.

Article I. The officers of this association shall be elected by ballot at the annual meeting.

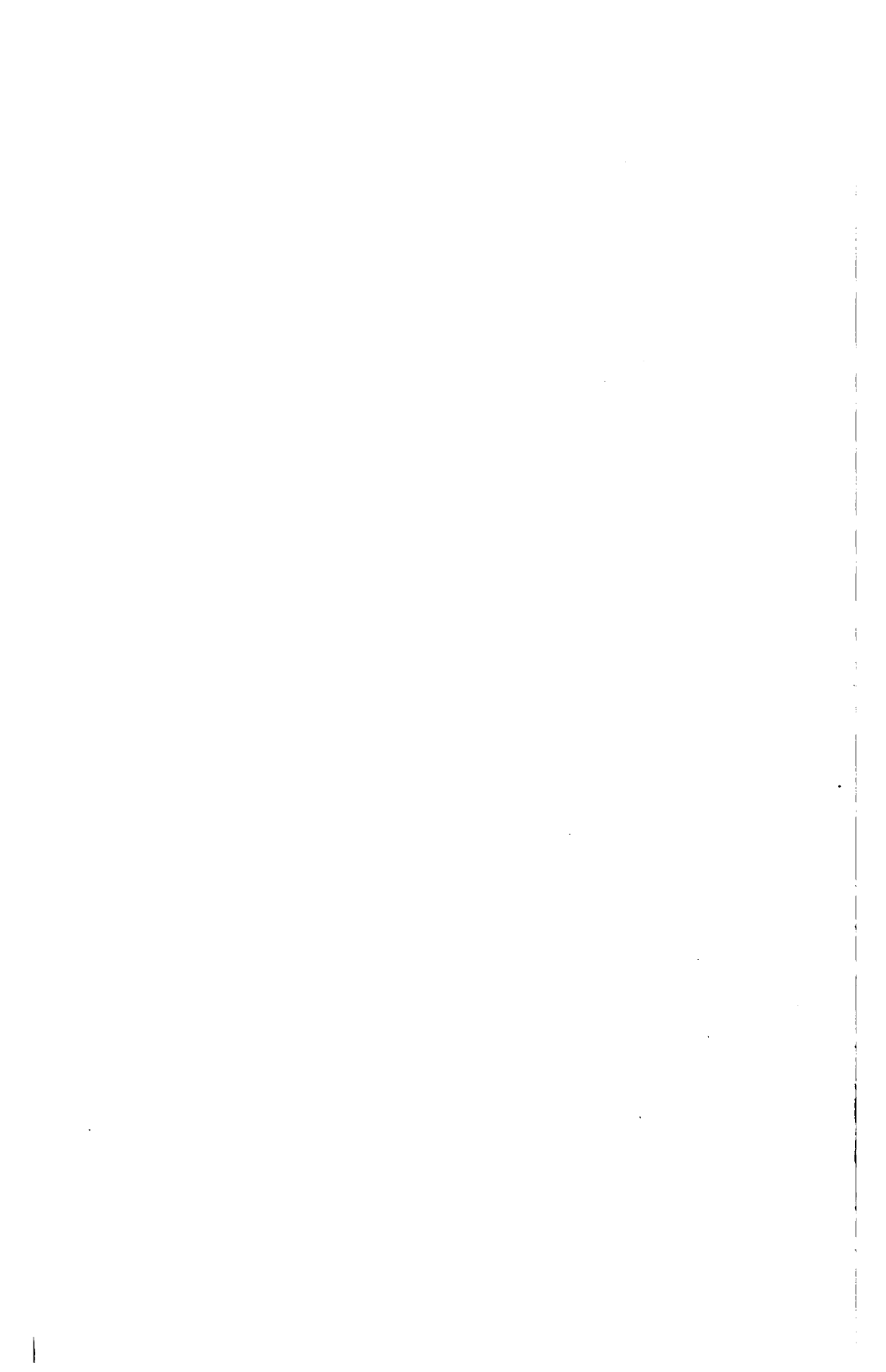
Art. II. The president and secretary shall be ex officio members of the executive committee.

Art. III. This association shall be governed by Roberts' Rules of Order.

Art. IV. All members joining at the organization of this association shall be known as charter members.

Art. V. The time and place of the annual meeting shall be determined by the executive and program committees.

Constitution adopted and organization effected Feb. 22, 1901.



Fourteenth Annual Report
OF THE
Wisconsin Agricultural Experiment Association

PRESIDENT'S ANNUAL ADDRESS

HENRY MICHELS, Malone

It is a privilege of which I feel very proud, to call to order this 15th annual meeting of the greatest agricultural association in the world. The Experiment Association is no experiment. For 14 years it has been developing and expanding and accomplishing things which many, many times exceed the most sanguine expectations which its founder, our worthy Prof. Moore, could have had in the beginning. For 14 years it has been expending its tremendous energy through one single channel. For 14 years we have been distributing choice seeds all over the state until today Wisconsin grows more pedigreed seeds than all other states combined. Our seeds have found their way into other states and other countries and the demand for them is constantly increasing because they have made good. In the fields they have been most profitable. In the show ring they are undefeated. The Experiment Association has earned for the state its justly deserved title—"The Seed Producing State Of the United States and For the United States." A membership of 1500 specially trained active farmers directed by a man of Prof. Moore's ability is a combination that knows no failure. While others have been planning and boasting what they are going to do, the Experiment Association has been actually doing things which have made an impression on the whole world; and the whole world has profited.

The breeding and dissemination of bigger crop producing seeds is an undertaking in which every farmer is directly interested. Whether the product he finally markets be grain or live stock or dairy products, his first problem is to make every acre of his land yield the greatest possible returns.

When the association undertakes to supply the world with seeds it assumes a grave responsibility and every member must be willing to bear his share of that responsibility. Upon the intelligence and thoroughness of our work depends the increase or the decrease in the production of millions of acres of high priced land. The realization of this should at all times keep us fully awake to the fact that selling seeds is a transaction that calls for the highest degree of honesty and intelligence. In spite of all laws which may be enacted to protect the purchaser, the seed business will always be one in which the character of the seller is one of the most important factors. In all our dealings let us give ample evidence that confidence in our honor is not misplaced. Directly or indirectly, the association is responsible for every sale that is made, and any member who fails to live up to the highest standards injures not only himself, but casts a shadow over the whole association. Farmers learn of the excellent qualities of our seeds through the results achieved by the members with them. They know that the association furnishes the members only with the purest seeds and buy of them in preference to others for that reason. This confidence which the public has in us and in our seeds is the most valuable asset we can possess, but it is one that can easily be irretrievably lost. A single act of bad faith on the part of a member is a greater damage to the reputation of the general membership than a hundred members can repair by conscientious dealing.

Quality must ever be our watchword. This season, more than ever, because of the high prices prevailing for most seeds, there will be the temptation to slip in an inferior article now and then, thinking that it will be excused because of the shortage of choice grades. But this is the time of all times when we must demonstrate to the world beyond all doubt that our association stands for the best and only the best. We must show that in times when others fall down the Wisconsin Experiment Association will not deviate one hair's breadth from its straight course in order to gather in a few extra dollars.

Coöperation is the popular cry of the day and the movement for good seeds will be much advanced if the members will coöperate freely with one another and with the officers. Not only must there be no unfriendly competition between

the members but there must be entire freedom from selfishness. A boost for the association or for a fellow member is a boost for the booster. In general we should concern ourselves more about the affairs of the association. In the past we have left all of the work to our secretary, and while he has handled it in faultless fashion, his ever increasing duties would be made much lighter if members were always ready to lend a helping hand. Our duty does not end when we have paid our membership fees. That, in fact, is the smallest part of it. We must thoroughly acquaint ourselves with everything that is being done so that we may become not only more efficient ourselves, but so we shall be able to discuss the purposes and accomplishments of the association anywhere and everywhere. Our annual report is published for the express purpose of keeping members fully informed and each one of us should make it a point to read this report from cover to cover.

In our correspondence we should identify ourselves with the association in every way possible. The adoption of a standard association shipping tag was a big step in the right direction. It would be an excellent thing if we had small cuts made of our trade-mark which could be loaned to the members to be printed on their letterheads, billheads and envelopes. It would be a benefit to all concerned if the office could furnish each member with a supply of small printed sheets which could be enclosed with all correspondence. This sheet would give general information concerning the objects of the association, the qualifications of the members, what it has done and what it proposes to do. The time has come when it would be a good plan to do some coöperative advertising in general farm papers. The treasury of the association has not sufficient funds for bearing the whole cost of an advertising campaign, but a plan might be worked out whereby the association would meet only part of the expense and the shippers of seeds the balance.

There is another reason why members should keep in close touch with the work of the association. Preparedness for national defense is the talk of the day and preparedness for the defense of our association is a subject which may well merit our consideration. This is not a pleasant thought, but we have no assurance that the unruffled waters in which we have been sailing so smoothly will always be calm. There

has never been any movement of great importance which has not aroused plenty of enemies and the pure bred seed movement is no exception. There are those whose business is affected by the enormous sales made by our members. There are those who would find fault for the purpose of creating political capital. And there are those who simply are jealous of the enormous strides we have made. Thus far, but little organized opposition has developed and this has been put down very effectively by our secretary single-handed. But the time may come when such attempts will become too powerful and too well organized to be subdued by diplomatic efforts and the membership may be called out in force to give an account of themselves and the association. Let us hope that that time may never come, but if it does come, let us be prepared to meet it.

Our worthy secretary has arranged for a very instructive program for this meeting. Our speakers are all authorities on their subjects and will give us the best they have.

SECRETARY'S ANNUAL REPORT, 1915

R. A. MOORE, Madison

For the past 14 years it has been my privilege to come before you with a special message bearing upon the work of our members. I take exceedingly great pleasure this year in calling attention to many things that are of great interest to the members of our association.

The past year has been remarkable in many ways and has brought us much profit in the way of experience. The Panama-Pacific Exposition gave an opportunity to our organization to determine what they were able to accomplish. The state of Wisconsin entrusted to our good worth the putting up of the Wisconsin Agricultural Educational display. This was a tremendous task of great magnitude, but by the many hundred willing hands an exhibit of agricultural products was displayed that even went beyond our fondest expectations in quality of product and greatness of display. Thousands of Wisconsin hearts were gladdened in the Palace of Agriculture at beholding the grand display of farm products from their native state.

It seems to your secretary that when our association was formed we could not foresee the functions we would be called upon to perform, but it seems almost providential that we should have been organized properly for the upholding of the dignity of our state at this great World's Exposition.

Our winners were numerous. I have not the time to name the winners; suffice it to say that in the Wisconsin competition display our exhibitors were awarded 12 Gold Medals, 45 Silver Medals and 25 Bronze Medals. The exhibit that gave joy to the many Wisconsin hearts during the past year has been returned from the coast somewhat worn and faded, but still carrying sufficient freshness and quality to interest every member of the association. It has been placed intact in the Live Stock Pavilion for the week to give to our members an idea of the constructive ability of our organization. This great educational display will go down in the history of our records as one of the achievements of our organization for which we are justly proud.

Sale of Pedigree Seeds

Our foreign trade in Pedigree Seeds has been severely cut the past year on account of the European war, but there seems no doubt that at the close of the war there will be great demand at excellent prices. I think it desirable for every member to plan on growing pedigree seed grains for foreign shipments and have a goodly supply on hand to meet the foreign demand.

The local demand and the demand from our sister states has been brisker than ever and all members having good seed found ready sale for it at a goodly figure. Your secretary feels that one of the factors that has added much to the wide sale of seeds has been the fairness that has ever characterized the business dealings of our members. The fraternal feeling existing between the seller and purchaser has been everywhere evident and has redounded in favor of our association.

For the first time this year there seems to be a desire on the part of some of the membership to boost prices beyond all reason on seed corn simply on account of the unfortunate conditions which obtained last year. The member should realize that mostly all of the buyers of seed corn are farmers like himself and there should be no attempt to take advantage

of the situation by charging double and treble the price that seed corn usually sold at.

Many calls for seed have already come to the office and lists of our growers have been sent to such parties. In many instances these same parties have written me that some of our growers would not even set a price on their seed and others wanted prohibitive prices which made it necessary to purchase elsewhere. It should be remembered that at the present time there are over 25,000 bushels of seed corn to be sold in the hands of our growers and more is being listed each day. We are not in the seed business for a season merely, but for a lifetime perhaps.

It seems reasonable this year that the grower should have a higher price for seed corn than in previous years as it required more labor to secure and fire-dry it. While the association makes no attempt to fix prices of products grown by the members, yet I feel that a good fair price to growers and buyers alike for good select ear corn would be \$5.00 per bushel and \$4.00 per bushel if shelled. This is to be sound high testing pure bred corn. Where a member is required to select sample ears for judging or for breeding plot an extra price can always be charged.

County Orders

New county orders are being formed from time to time, Waushara county being the fiftieth county to organize. The association is doing everything in its power to help such organizations at their annual meetings and in the sale of seeds, etc. Members of the state association should feel that they stand sponsors to the county associations and should take a lively interest in their progress.

Membership

Our membership has grown steadily and at the close of the year we had a paid up membership of 1446.

More criticism than ever before has come to the secretary that much smut developed in the oat crop this year that was sown with seed oats purchased from our members. This leads me to believe that our members are not as careful as they should be in the treatment of seed for the prevention

of smut. The association will demand for 1916 that all seed oats and barley sown should be treated. The treatment is so simple and effective that there is no valid excuse for not treating the seed sown upon the farm.

We desire to have all seed oats sacked loosely and submerged for five minutes in a solution made by pouring one pint of formaldehyde into 36 gallons of water. For barley submerge two hours. The time saved by having a large quantity of solution made up for the treatment will more than offset the extra cost for formaldehyde. After treating the grains they should be emptied on the barn floor and covered for two hours with canvas or blankets so as to make the treatment entirely effective.

I sincerely hope we will have no more complaints from this source.

The Plant Pathology Department has gotten out specific instructions for the treatment of all seed grains not only for smut but for other diseases as well which can be safely followed. Let us be able next year to list all seed oats at least as smut free. It will add immensely to our prestige as seed growers.

New Experimental Work.

Through the kindness of our U. S. senators and representatives your association has been permitted to carry on the experimental work with the new grains and grasses which the U. S. Department of Agriculture provides. We appreciate this acknowledgment of their confidence in us as trained experimenters and it is hoped that every member receiving grains from Washington will carefully grow them and not fail to report results.

During the coming year the Experiment Association has planned on some interesting experiments for its members in the growing and observation of some new crops. It is desired that each member cooperate with the association in some of this work for it means much to our future welfare as a state body of experimenters. By carrying out some line of effort it will keep our members in closer touch with the association and assist them to keep abreast of the advancement in agriculture.

A new and perhaps important line of experimental work was undertaken last year by your association. The problem was to determine whether or not a phosphate fertilizer will improve the quality of seed corn and hasten its maturity.

The agricultural chemist tells us that the element phosphorus in the soil has a great deal to do with the formation of the seed parts in most all our plants. Where there is a lack of this element the grain or seed suffers and there is not its complete and proper development.

In the laboratory it has been demonstrated that phosphorus hastens the maturity of the seed. If this is true, then it may be profitable for our farmers to apply phosphorus to their seed corn crop which will hasten the maturity of the corn and increase the quality of the ear. Very careful work is needed to determine whether this is of practical importance to the Wisconsin farmers, but if the members of our association will conscientiously carry out the experiments we may soon reach a solution of the problem.

The growing of soy beans for seed was taken up last year by a number of our members and practically all were enthusiastic over their crop, even if it was badly injured by our unusual season. This is a very important work for those interested to take up, for the demand for seed has always been good. Seedsmen are now selling soy beans at \$3.00 per bushel, one bushel being sufficient to plant three acres.

That there will be an increasing demand for the seed is certain, for the Soils and Agronomy Departments, also the county agents, are demonstrating the importance and value of this crop to the man farming sandy soils or in fact any soil deficient in humus.

Members having a spare acre or two will make no mistake in putting in soy beans, not alone from the seed standpoint, but for the valuable feed the soy bean plant produces. Live stock relish it and the chemist shows soy bean hay to be nearly equal to alfalfa in feeding value.

State Fair Exhibits

Again the county orders of our association have been winners and leaders in placing exhibits of their county resources at the state fair. And because of the quality, beauty and interest in these exhibits, the state fair manage-

ment has built a county building to house them and generous prize money is given each county making an exhibit.

It is hoped that this coming year will see an increasing number of our orders entered at the fair, for these exhibits give a wonderful opportunity for advertising the quality and superiority of the improved varieties of grains, potatoes and fruit with the resources of the county and state.

On account of holding the state fair at an early date it has been quite hard to get out an exhibit of corn that would do justice to our great corn state. The management will arrange this year to let 1915 corn be exhibited for prizes as well as the crop of 1916.

Members of the association are requested to hold their samples now on exhibition at our show and enter them in the state fair show in September. We are also planning on making an association display of the prize winning grains at the state fair to show the people of the state in general what can be accomplished by our members in the growing of pedigree seeds.

IN MEMORIAM

James Grant Tyler.

It is with exceedingly deep regret that we chronicle the fatal accident which deprived our Association of one of its loyal members. Last summer Mr. Tyler was endeavoring to break a colt to the halter when the animal became frightened and kicked him in the stomach. Mr. Tyler lived only a short time after the deadly kick.

The deceased was 37 years of age and a resident of Valders, Manitowoc county. He always took a deep interest in the work of the Experiment Association and was known as a progressive farmer and broad-minded citizen.

The Wisconsin Agricultural Experiment Association extends its sincere sympathies and commiseration to the sorrowing wife, children and relatives.

Winfred J. Wiley.

Once more the grim reaper has called from the ranks one of our faithful and true workers and it is with regret that we announce his departure from this life. By his sterling character and unselfish principles, Mr. Wiley gained for himself the esteem and admiration of his neighbors and friends. And it is extremely sad that he should be called away when success had crowned his arduous labors and he was ready to enjoy the fruits of his industry.

Winfred J. Wiley was born September 19, 1865 in Delaware county, Ohio. At the age of 12 he came with his parents to Hancock, Wisconsin where he spent the remainder of his life.

As a progressive farmer Mr. Wiley was one of the men whose farsightedness and natural ability have helped to make this state noted for its advanced agriculture and high type of farming. Our association has been proud to number among its members such men as the late Mr. Wiley and desires to express to the wife, children and relatives its sorrow at his untimely death.

Charles Augustus Walker.

An unestimable loss occurred to this Association and the agricultural and business interests of Waushara county in the recent death of Charles A. Walker, president of the Waushara County Order of the Experiment Association. The late Mr. Walker typified the progressive, broad-minded business man who is unselfishly endeavoring to advance the agricultural interests of his community. Through personal sacrifices of time and means such men are rendering a wonderful service in forwarding the agricultural progress of our state.

We regret the loss of such a faithful and conscientious fellow worker as Mr. Walker, but we know his life has been an inspiration and guiding star to others who will plunge into the fray and battle against inertia and complacency which are staying the progress of a better agriculture.

Mr. Walker was born November 23, 1877, in Wautoma, Wis. Since 1899 he has lived in Hancock where he was the able cashier and president of the Bank of Hancock. The Wisconsin Agricultural Experiment Association was proud to number among its friends such a man as Mr. Walker and it was indeed a shock when his death occurred on April 8, 1916. To his sorrowing wife, relatives and friends, the Experiment Association extends its sincere sympathy in their bereavement.



James G. Tyler



W. J Wiley

SEED GRAIN INSPECTION AND CROP REPORTS 1915-1916.

J. J. GARLAND, FARM INSPECTOR

The following bins or lots of grain were inspected and rejections made.

30 lots Barley.....	3 rejections
52 lots Oats.....	5 rejections
38 lots No. 12 corn.....	5 rejections
36 lots No. 7 corn.....	4 rejections
5 lots No. 8 corn.....	1 rejection
4 lots No. 15 corn.....	2 rejections
3 lots No. 1 corn.....	2 rejections

Total number of bushels of grain inspected were:—

Barley.....	15,000 bushels
Oats.....	30,000 bushels
No. 12 corn.....	3,250 bushels
No. 7 corn.....	3,000 bushels
No. 8 corn.....	750 bushels
No. 1 corn.....	250 bushels
No. 13 corn.....	5,000 bushels
Wheat.....	2,000 bushels
Rye.....	1,500 bushels
Total number of farms inspected.....	93

EXPERIMENTAL PROJECTS 1916-1917

Carried out coöperatively by the Association with its Members.

1. Dissemination and trial of pure bred grains, seed for acre plot of following grains furnished Ped. No. 9 barley, No. 1 oats, No. 5 oats, 60 day oats, No. 12 oats, No. 2 winter wheat, Marquis spring wheat, No. 1 and 2 winter rye, No. 7, 8 and 12 corn.
2. Adaptability of Sudan Grass, seed disseminated and special plantings arranged for.
3. Soy beans disseminated for seed production and value to sandy soils. Tests carried on with Ito San, Med. Early Green, and Wis. early black varieties.
4. Use of acid phosphate for early maturity of seed corn. Fertilizer furnished for $\frac{1}{2}$ acre plots.
5. Alfalfa experiments. Carried out under direction of Alfalfa Order.
6. Tests with sweet clover for seed and feed in Wisconsin. Seed distributed and trial seedings advised.
7. Boys and Girls County Corn Contests. Seed furnished County Supt. for distribution.
8. Seed furnished for demonstration of trial plots with County Agr. Advisors.

REPORTS FROM MEMBERS OF EXPERIMENT ASSOCIATION ON THE YIELDS OF PEDIGREE GRAINS GROWN IN 1915

Pedigree Barley.

Number of members reporting.....	266
Average yield Pedigree Barley.....	bu. 37.56
Average yield of barley for Wisconsin (U. S. Dept. Rept.).....	bu. 35.5
Average yield of barley for United States (U. S. Dept. Rept.).....	bu. 32.0
Difference in favor Pedigree Barley over U. S. Av.....	bu. 5.5

Pedigree Oats.

Number of members reporting.....	540
Average yield Ped. 1 Oats.....	bu. 57.8
Average yield Ped. 5 Oats.....	bu. 55.4
Average yield 60 Day or Kherson Oats.....	bu. 53.6
Average yield.....	bu. 48.5
Average yield Oats for Wis. (U. S. Dept. Rept.).....	bu. 46.5
Average yield Oats for U. S. (U. S. Dept. Rept.).....	bu. 37.8
Difference in favor Pedigree 1 Oats over other varieties.....	bu. 9.3

Pedigree Winter Rye.

Number of members reporting.....	78
Average yield Ped. Winter Rye.....	bu. 24.2
Average yield other varieties.....	bu. 19.8
Average yield Winter Rye for Wis. (U. S. Dept. Rept.).....	bu. 18.5
Average yield Winter Rye for U. S. (U. S. Dept. Rept.).....	bu. 17.2
Difference in favor Pedigree Winter Rye over other varieties.....	bu. 4.4

Pure Bred Corn.

Number of members reporting.....	154
Average yield Silver King (Wis. No. 7) Corn.....	bu. 51.2
Average yield of Golden Glow (Wis. No. 12) Corn.....	bu. 49.8
Average yield of Early Yellow Dent (Wis. No. 8) Corn.....	bu. 42.4
Average yield of Corn for Wis. (U. S. Dept. Rept.).....	bu. 23.0
Average yield of Corn for U. S. (U. S. Dept. Rept.).....	bu. 28.0

Winter Wheat.

Number of members reporting.....	84
Average yield select Winter Wheat.....	bu. 26.6
Average yield Winter Wheat for Wisconsin (U. S. Dept. Rept.).....	bu. 23.0
Average yield Winter Wheat for U. S. (U. S. Dept. Rept.).....	bu. 16.2

Spring Wheat.

Number of members reporting.....	54
Average yield Spring Wheat.....	bu. 28.3
Average yield Spring Wheat for Wis. (U. S. Dept. Rept.).....	bu. 22.5
Average yield Spring Wheat for U. S. (U. S. Dept. Rept.).....	bu. 18.3

The data given in the following tables was compiled from reports from members of the association on the yields of their crops and manner of planting for 1915. All extremely high and improbable yields were excluded in making up the tables. Also, where there were only one or two reports on a method or rate of seeding they have not been used.

Last year was rather exceptional in many respects as to weather conditions, so methods of planting or rates of seeding which did well last year may under different seasonal conditions prove not so good.

As a rule the small grains gave very heavy yields in all parts of the state. Oats especially did well and many yields would have been heavier if all the grain could have been saved. Corn yields were very unsatisfactory due to the cold growing season and early frosts and little ear corn husked. On farms where the land was favorably located as regards freedom from frost, and had good drainage, also when the corn was of an early or well adapted type, seed was saved.

The members of the Experiment Association as a whole raised more and better corn than their neighbors, for they were growing the standard pure bred corn and it matured where others did not. And the association members had seed to sell because they knew how to take care of it in the best possible manner.

YIELDS OF GRAINS PLANTED AT DIFFERENT RATES OF SEEDING ON DIFFERENT TYPES OF SOILS.

Soil	Variety of oats	Rate of Seeding in Bushels				
		1-¼	1½-¾	2-¼	2½-¾	3-¼
Heavy	Ped. 1.....	49	61	61	57	57
	Ped. 5.....	48	62	57	64	64
	Any Var.....	56	51	49	51	51
	Average.....	51	58	56	57	57
Loam	Ped. 1.....	59	60	56	60	60
	Ped. 5.....	58	59	50	54	54
	Any Var.....	55	61	58	58	58
	Average.....	57	60	55	57	57
Sandy	Ped. 1.....	47	50	56	58	65
	Ped. 5.....	46	54	66	38	38
	Any Var.....	40	48	50	25	25
	Average.....	47	45	53	58	43
Av. for Ped. 1 on all soils.....		47	52	59	58	60
Av. for Ped. 5 on all soils.....		47	58	57	52	52
Av. for any Var. on all soils.....		50	53	52	44	44
General av. for all oats.....		47	51	56	56	52

RATES OF SEEDING

The usual rate for sowing oats is about 2½ bushels per acre, and from the reports of our members this rate of seeding averages up very well for all the different varieties. On the heavy and loam soils there seemed to be no advantage in

sowing heavier than this, and for the sandy soils no gain in seeding lighter. So taking a general average of all the oats seeded and the different types of soil it seems that from 2 to $2\frac{3}{4}$ bushels gave the best results as far as last year was concerned.

The best yield at the different rates of seeding winter wheat was $1\frac{1}{2}$ bushels per acre, which amount is generally recommended. No great difference can be noted for the different rates as applied to the various types of soils. With spring wheat there is some variation and the $1\frac{1}{4}$ bu. rate seemed to do as well as the 2 bu. seeding. This is probably due to the small number of reports averaged.

The winter rye gave the best average at the $1\frac{1}{2}$ bu. rate, and this can generally be recommended. The heavier rate did best on the sandy soils last year, but with a dry season it may not do so well.

With barley the 2 bu. rate gave the highest yield, but it was only slightly more than the $1\frac{1}{2}$ bu. rate.

YIELDS OF GRAINS PLANTED AT DIFFERENT RATES OF SEEDING ON DIFFERENT TYPES OF SOILS.

Grain	Soil	Rate of Seeding				
		1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2
Winter Wheat	heavy.....	20	31	30	30	28
	loam.....	38	33	29	33	29
	sandy.....	19	25	29	22	
	Average.....	25	29	29	28	28
Spring Wheat	heavy.....			28	27	28
	loam.....	25	28	24	25	28
	sandy.....			23		
	Average.....	25	28	25	26	28
Ped. Winter Rye	heavy.....		30	32	23	23
	loam.....		25	28	30	23
	sandy.....	19	16	25		31
	Average.....	19	23	28	26	25
Ped. Barley	heavy.....	33	39	38	36	43
	loam.....	34	40	39	41	39
	sandy.....		30	39	41	39
	Average.....	33	36	39	39	40

DRILL OR BROADCASTING

This past year broadcast seedings of oats seemed to do best and a $2\frac{1}{2}$ bu. increase over the drill method is noted.

The number of farmers who used both methods is about equal, so the test was quite fair for last season.

The pedigree barley gave a slightly better yield when drilled, likewise, with spring wheat. Winter rye and wheat, however, did best by 3 to 4 bus. on the broadcasted fields.

With corn we would naturally expect a heavier rate of planting to give the largest yield, but the check-row method gave 2 bus. better yield than drilled last year. Possibly the ease in which check-row corn can be kept free from weeds had something to do with its better yield, especially during a wet season.

YIELDS IN BUSHELS OF THE DIFFERENT GRAINS COMPARED AS TO PLANTING ON SPRING OR FALL PLOWED LAND AND DRILLING OR BROADCASTING.

Grain	Land Plowed		Planted	
	Spring	Fall	Drill	Broadcasting
Ped. 1 Oats.....	53.6	60.6	56.6	58.6
Ped. 5 Oats.....	49.3	57.6	54.6	56.6
60 Day or Kherson.....			50.1	58.3
Any Variety Oats.....	49.6	52.6	50.9	49.3
Average for all Oats.....	50.8	56.9	53.	55.7
Ped. Winter Rye.....	24.6	26	23	27
Ped. Barley.....	38.6	39.3	40.6	38.3
Winter Wheat.....		28.3	26.6	29
Spring Wheat.....	27.6	26	26.6	26

SPRING VS. FALL PLOWING

Oats planted on fall plowed land most always give the best results and last year they averaged 6 bushels better than oats planted on spring plowed land. The year before oats went 5.4 bus. more per acre on fall plowed land than spring plowed.

Barley did not make much of a showing for fall plowed land over spring—there being scarcely a bushel difference while last year there was a difference of 4.2 bus. in favor of fall plowing.

Spring wheat gave one bushel better yield on spring plowed land, but there were very few reports on this crop.

REPORTS ON THE YIELD OF CORN PLANTED ON DIFFERENT TYPES OF SOIL
AFTER FALL OR SPRING PLOWING.

Corn	Plowed			Planted	
	Soil	Spring	Fall	Drill	Check
Wisconsin No. 7	heavy.....	52	56	72	41
	loam.....	55	45	42	51
	sandy.....	42	57	26	48
Wisconsin No. 12	heavy.....	47	58	58	51
	loam.....	52	49	49	57
	sandy.....	46	48	39	50
Average.....		49	52	47	49

Corn made a yield of 3 bu. more on fall plowed land. However, on many farms last year spring plowed land gave the better yield. This was undoubtedly due to the unusual season. When an average number of years are considered, fall plowing is usually quite superior to spring plowed land for most of our crops, and it pays.

WHAT CAN WISCONSIN DO TO MAINTAIN AND INCREASE HER CROP YIELDS?

HENRY G. BELL, AGRONOMIST

Soil Improvement Committee of the National Fertilizer Association.

Wisconsin enjoys singular advantages, which make her a great agricultural state, and therefore she is destined to be one of the most important food producing states in the Union. Her outstanding advantages are her climate, soil, navigation facilities, proximity to large urban population, and the type of her people. Wisconsin farmers are noted throughout the country for their stability. They are keen and perceiving; industrious, yet selective of the avenues along which their efforts are expended. They are conservative, yet exhibit a splendid sense of business. Statistics show that in no state in the Union do more farmers own their land. In no state, as a rule, are they selling their labor and ability at more profit to themselves. These substantial qualifications, praiseworthy though they be, are based on factors which

need the keenest attention if they are to persist,—if they are to survive the test of time.

The records of 1910 show that Wisconsin manufactured nearly 150,000,000 pounds of cheese; that Wisconsin produced over 182 million bushels of money crops, consisting of wheat, corn, oats, barley, rye and potatoes. Much of this material was shipped out of the state. With these millions of bushels and millions of tons of produce going out of the state year by year, is going an ever-increasing quantity of the constituents of plant food,—namely, nitrogen, phosphoric acid and potash. This continual draft is upsetting the balance of the plant food which is circulating among the tiny particles of soil, and although Nature is doing her part by letting loose more and more of that great store of potential food, which the chemist has revealed as existing in the soil, still there is an ever-increasing shortage in the available supply of those materials which make for largest crops of best quality. It is our purpose to discuss these essential constituents of plant food in relation to conditions which prevail in any soil in any state, under any condition.

First, let us agree upon a satisfactory theory as to what constitutes the fertility of the soil, and as to its disposal. Science has established beyond a doubt, that the plant can make use of only that material which is dissolved in the waters of the soil. It does not matter what store of plant food—of nitrogen, phosphoric acid and potash—exists in the inside of the tiny kernels or crumbs of soil—if this plant food is not in such shape that it can be readily dissolved so that the plant roots can absorb it, it is just as useless to the growing crop as a similar number of crumbs of gold or lead would be. We frequently hear it said that the fertility in the soil—the store of food—as is revealed by a chemical analysis of the soil, corresponds to the farmer's bank account. As he writes checks upon his bank account he depletes it; as he grows crop after crop of corn, wheat, oats or potatoes, he depletes the store of fertility in the soil. This comparison contains a certain element of truth, but does not adequately illustrate the intrinsic powers of soil fertility. We would rather compare the fertility in the soil to a steam engine, which depends for its power upon the head of steam in the boiler.

There are conditions which make one steam engine more powerful than another; similarly, there are soil conditions which make one soil more productive than another. Let us study this analogy, so that we may emphasize, in its logical place, the importance of each condition of the soil which limits the power to produce largest and best crops. In the first place, the steam engine may be weak because of lack of fire under the boiler. The fire, in turn, may be low on account of poor draft, or poor circulation of air. Similarly certain soils may be unproductive because the tiny spaces between the soil kernels are filled with water, to the extent that all air is excluded. Circulation of air in the soil is not only necessary for plant growth, but it is absolutely necessary for the maintenance of the beneficial bacteria of the soil which are there to do such great service for the farmer, if he makes conditions suitable for their propagation.

In the second place, the steam engine may be weak on account of poor construction. The soil engine may be unable to do its work on account of the lack of vegetable or organic material. Under primitive conditions the falling of the leaves, the rotting of the grass, and the decay of the plant roots of wild plants kept up the supply of this constituent essential to fertile soil. But as men started in to grow larger crops of better quality by means of tilling the soil, they have not in all cases paid attention to putting back as much organic matter as is necessary to keep the soil in good physical condition. Organic matter or humus is one of the great essentials to soil fertility. It performs at least six great services. First, it acts like a sponge, catching and holding water to supply the great needs of the growing crops. Second, it binds together a sandy soil, giving it body. Third, it opens up a heavy clay soil, giving it proper crumb or fineness. Fourth, it supplies a home for soil bacteria. Fifth, it supplies food for soil bacteria. Sixth, it catches and holds plant food constituents which are dissolved in the water of the soil in greater abundance at times than the plant can utilize. *No tillage of the soil, no rotation of crops, no addition of available plant food can take the place of or do the work of humus or organic matter in the soil.* This, then, should be the second great condition of the plant home to which the farmer should address his attention.

The steam engine may be weak on account of the lack of lubricating its parts. So too, the soil engine may be unable to do its work on account of the wrong chemical reaction within its soil solution. There are conditions under which it is difficult and even impossible to grow common red clover, alfalfa or other legumes. Such conditions usually result from continuous cropping without any attention whatever being given to the up-keep of the lime in the soil. The common name of such condition you all know as soil sourness. As to just what reactions take place within the soil producing such condition, we are not fully informed at the present time. But farmers in general know how to recognize the condition and how to apply the cure. Then the third great condition of soil productiveness is the control of its sweetness or sourness.

The fourth great controlling condition of the power of the steam engine is the head of steam maintained in its boiler. If there is a shortage of water in the boiler not enough steam can be generated. Again, if the water in the boiler is not raised to steam-producing temperature an insufficient head of power results. Now the steam supply in the boiler corresponds almost identically to the plant food balance in circulation in the soil. It is universally recognized that soil moisture changes in its level underground much the same as it does above the soil. To illustrate, if you dip a pail of water out of the center of a big tank the fluid rushes in from all sides to fill the space. Similarly, if a crop of corn is pumping out the soil moisture and the soil plant food from an 80-acre field, the supply of moisture with its balance of fertility, which is in the soil surrounding that field, will rush in in its attempt to fill up the deficiency caused by the draft made by the corn crop. So it is that the supply of plant food is moved in all directions. Furthermore, it is moving to some extent downward, by the law of gravity, and upward by the principle of capillarity, or the clinging of moisture from one kernel to another in its upward rise. There is another force which causes the moisture to rise in the soil. It may be stated as follows:—If the farmer increases the strength of plant food solution in the top six or eight inches of soil, he thereby creates a force drawing up the moisture from below into the plant feeding regions of the soil. The layer of subsoil just under the plow furrow acts as a sort of

membrane through which the water rises with greater rapidity than the silt-charged water sinks into the earth. Now, you may increase the plant food solution in the growing areas of your soil by good tillage, by filling the soil with organic matter by an addition of barn manure, or by fertilizers or by any combination of these. The point I wish to make is that the active plant food in the soil is dissolved and is moving about within the soil body.

Undoubtedly you are aware of the essential plant food constituents. Nitrogen, that element which forms such a large proportion of the air we breathe is the constituent of plant food that causes the corn stalk to grow. Phosphoric acid is the constituent which causes the plant to ripen and which hastens the filling of the kernel. Potash is the constituent of plant food which gives strength to the straw or grass, and has considerable to do with the deposit of starch within the kernel or other fruit of the crops. None of these constituents exist in pure form in the soil. They are combined with other materials, some of which are readily dissolved in water, others of which must be acted upon by the bacteria of the soil in order to render them in such form that they can be dissolved and absorbed by plants.

Wisconsin has considerable areas of varying types of soil. Her medium loam soil, as a rule, contains a medium amount of nitrogen and a fair supply of phosphoric acid and potash. Her clay soils contain a medium to large supply of potash and a variable supply of nitrogen and phosphoric acid. Her sandy soils, which have been farmed for some time, are usually fairly short of all three important plant food constituents. This does not mean now, that sandy soils will not produce good crops. A sandy soil will respond most quickly to good treatment, and conversely will show bad management quicker than any other soil. The marsh or muck lands contain a great amount of organic matter. They are therefore rich in nitrogen, but poor in phosphoric acid and very poor in potash. These, then, are the essential tools or facts with which you have to work. Obviously the problem is to keep the home of the plant in suitable form and to keep the supply and balance of plant food constituents in proper form to meet the needs of the growing crops.

Some soil students say we know but very little about the soil and its management, and therefore this whole question of



Seed from this field of Turkey red winter wheat yielding 42 bushels per acre was distributed to members of the Association.



Corn curing house of A. O. Popp, Jefferson, where his well selected seed corn is given the proper care.

the handling of the last great controlling factor of soil productiveness is dismissed as a hopeless or a mysterious task. Now, the people that take this attitude toward soil fertility probably speak the truth for themselves, but the scientific world has a considerable fund of definite information concerning the management of soil fertility and the production of large crops. Your own institution has had an important part in discovering and elaborating many of these principles. De Saussure, the French scientist who lived early in the 19th century, established beyond a doubt the fact that plants take up their food constituents in solution. Baron Von Liebig, the great German chemist who lived about this time, pointed out that the essential plant food constituents could be supplied in other forms besides barn manure. He recognized the great value of stock manure and advocated its careful conservation and wise use, as all well informed students on the subject do. But even in his day the supply of stock manure was inadequate to the demand. As a result, Liebig discovered that bone which carried a large per cent of phosphoric acid, could be rendered into such form that its plant food was soluble by the addition of a certain amount of acid. This acid acted upon the ground bone and changed the insoluble or three-lime phosphoric acid to the soluble or one and two-lime forms. Liebig discovered that by using this material it supplied a small amount of the constituent which causes the plant to grow, and a large amount of that which causes it to ripen. Later he discovered that the plant needed more of the stalk-growing material than was hereby supplied. He therefore added carriers of nitrogen, such as nitrate of soda, sulphate of ammonia, and in later years other carriers of ammonia or nitrogen have been used.

It was also discovered that the addition of potash salts supplied the constituent which gave strength to the growing straw or stalk, and hastened the filling of the kernel or fruit. Not only were these fundamental principles developed in the laboratory by Liebig, Priestley and Sennebie, but they were demonstrated in the field by Sir John Bennet Lawes in his classic series of experiments at Rothamsted, which were established in 1843. Here, with his associate Gilbert, he illustrated the actual management of the plant food solution to such effect that he increased his yields and varied quality

almost at will by modifying the balance of the essential plant food constituents.

In 1886 two German scientists, Hellriegel and Wilfarth, made a very important contribution to agricultural science. They discovered that the knots on the roots of the legumes—alfalfa, common red clover, alsike clover, field peas, soy beans, etc.—contained microscopic forms of life known as bacteria. These bacteria obtained their food from the root juices, and in return took much of the nitrogen out of the air which was circulating in the soil and fixed it in their bodies or in their homes so that the soil was richer in nitrogen after the growth of legumes than it was before, provided that some of the leguminous crop was turned in as green manure. It is impossible at this time to do justice to the importance of this discovery. Of course, the fact that the growth of clover enriches the soil in some essential constituents of plant food was known even as far back as the time of the Romans, who planted lupines and pulse before wheat, precisely to increase the plant food supply for the wheat. This discovery has been an immense benefit on your good Wisconsin farms. It has meant the up-building of many of your sandy soils, as it meant the salvation of the infertile sands of Belgium and southern England over a century ago. Therefore the growth of a leguminous crop in the rotation, under general farming conditions, is good practice. Not only does the legume add some nitrogen to the soil, but its fibrous roots add enormous quantities of valuable humus. There are conditions where this supply of nitrogen can be profitably supplemented by the addition of available nitrogen carriers. It has been established beyond the shadow of a doubt that the use of a certain amount of a carrier of nitrogen or ammonia in fertilizers for potatoes, grain, tobacco and other crops gives the plant a vigorous start which makes it able to send out rootlets which lay hold of what to weaker crops would be unavailable plant food.

The next great source of plant food is live stock manure. It is like bringing coals to New Castle to talk to this intelligent audience about the merits of stock manure, and yet we find that not all farmers in even this good state pay such attention to the storage and wise use of stock manure as it merits. You are credited with keeping more live stock per cultivated acre than any state in the Union, yet if you

estimate the large quantities of plant food that you are removing in your seed crops and in your other farm products which are shipped out of the state, and if you estimate the loss of plant food in the manure which is returned to your soils, you will be aware of the great deficit which must occur year by year. We are not belittling the value of livestock manure. We are emphasizing its importance, but there is not one-fifth enough to keep up the fertility. It is Nature's great source of plant food. For forage crops and for such crops as are grown for large plant growth it is an ideal plant food. For grain crops, it is weak in phosphoric acid. Your own Station has investigated this point. Charles E. Thorne, Director of Ohio Experiment Station, after 25 years of experimenting, recommends the use of 40 to 50 pounds of acid phosphate per ton of manure to supply this deficiency. Such an addition not only makes the manure go further, but brings it nearer to an ideal grain plant food.

The next source of plant food is fertilizers. Fertilizers are carriers of available plant food. They are the product of the mine, the air, the sea, the factory, and the by-product of the packing house and several other essential industries. Their constituents are obtained from all parts of the world, and by mechanical and chemical processing are rendered into such form under chemical control that they can be evenly distributed over the soil, and can supply to it adequate amounts of the various plant food constituents to make conditions optimum for the production of largest crops of best quality.

This fertilizer problem! you say. How shall a man know what to do to make his farm most productive? If we would judge from the reply to this question that is given by some of the agricultural writers of today, we would conclude that this was a very new problem, and one shrouded in mystery. To show you the fallacy of such an attitude, let me point to two or three facts, the first of which is that fertilizers have been manufactured since 1842; that Germany was using 8,000,000 tons in 1910; that some of our eastern states are producing under conditions whose physical obstacles are mountainous compared with those of the Middle West, over twice as many bushels per acre of potatoes and almost twice as many bushels of corn as the Middle West for the last ten years. Now, is it not fair that we credit the farmers of the eastern half of our continent with some business sense?

It would be eminently fitting to credit European farmers similarly. If this be the case, then, it surely must have paid Maine farmers to use 80,000 tons of high-grade fertilizers in 1910, else there would not have been a demand for 140,000 tons for the same area in 1915. The German empire is able to defy the world today, as far as its supply of food is concerned, precisely because ~~it~~ ^{it} long ago learned the right handling of the soil and the right management of plant food, which includes the wise use of stock manure, and the judicious use of available plant food or fertilizers.

You ask what definite suggestions I have for the Wisconsin farmer. I have three.

1. "Clear the decks"—is the command when battleships prepare for action. Everybody knows that this command means to get everything in order for most effective work. The spirit of this order is my first suggestion. Drain your soil, rotate your crops so that a legume may be grown upon the land as often as desired. Keep up the stock of humus in the soil. Apply lime sufficiently often and in sufficient quantities to keep your soil sweet. Give your soils proper tillage to insure good circulation of air in the soil.

2. Manage your plant food so as to keep up the desirable supply and balance of available plant food constituents. You wouldn't think of turning your high record Holsteins out on oat stubble pasture alone, and expect them to keep up their record. Certainly not! You weigh up the carbohydrate and protein-carrying feeds in just the right proportions every day, and you get the greatest profits from your cows. Your crops are just as responsible as your cows. Balance up their nitrogen, phosphoric acid and potash, and your money crops will show the profit. But you ask how shall we do this? My answer constitutes my other suggestion.

3. Balancing plant food. There are three sources of plant food—nitrogen from legumes; nitrogen, phosphoric acid and potash, from farm manure; and the same plant food constituents from fertilizers. We have already reviewed the general food characteristics of the different types of soils. The general crops of the farm have their distinctive food requirements, as follows:—

<i>Nitrogen</i>	<i>Phosphoric Acid</i>	<i>Potash</i>
Hay—Much	Small amount	Fair supply
Grain—Fair Supply	Much	Fair supply
Roots—Fair supply	Fair supply	Much

Now, with these two sets of facts in mind, the farmer can balance his plant food from the three sources named above. It is hard to say definitely just how much nitrogen is fixed per acre per annum, by the common legumes grown upon our farms, because actual experimentation has not so far revealed this amount. Indications are that under favorable soil conditions this amount varies from 25 to 75 pounds per acre per annum. Average farm manure returns about 10 to 15 pounds nitrogen, 5 to 9 pounds phosphoric acid and 9 to 14 pounds potash per ton. With these facts in hand, then, can you not estimate how much plant food you have returned to your soil in this year's rotation and manuring?

When it comes to fertilizers, you have definite guaranteed analyses to go by. You have the per cent of nitrogen, phosphoric acid and potash. Now, as to just what to use on your soil, for your different crops, neither I nor any other man can tell you. I can tell you what others have done with profit—both experiment stations and actual farmers. To state this as concisely as possible you will find on Page 14 of the booklet on Science and the Soil, the amounts and range of analyses which have been used with profit on various types with common farm crops.

Our suggestion then is for you to choose your fertilizer of an analysis to make up for the weakness of your soils and to meet the special requirements of your crops. Fertilize part of the crop, and compare it at harvest time with the unfertilized. Compare the yields and the quality of crop from both parts.

This question of crop feeding is one of great importance to you farmers who are producing selected seed. An increase of 10 per cent to 20 per cent in the amount of your corn that will grade "seed corn" pays handsomely with seed corn at \$4.00 to \$5.00 per bushel.

What I have outlined is fact based on careful scientific experimenting. It is the basis for profitable farm practice in this country and Europe.

Wisconsin has done great things—she can and will do immensely greater things. You can double your yields of corn and wheat and oats in many sections and greatly improve the general quality of your cereals and potatoes by proper plant food balancing.

THE SEED CORN SITUATION FROM THE PRACTICAL FARMER'S STANDPOINT

W. H. HANCHETT, Sparta.

The first question that arose in my mind when I received Prof. Moore's invitation to present this subject at this meeting was, what is a practical farmer, and am I qualified to speak in his behalf? It was evident that Prof. Moore so considered me or I would not have been invited to handle this subject, but what about the farming public?

I was well aware that every farming community has its member who takes pride in posing as A Practical Farmer with whom no New Fangled Ideas pass. This fact he loves to repeat with great emphasis on all occasions, and he takes pains to be present on all occasions to repeat it. If the occasion is the annual school meeting in his "Deestrick" he is there to oppose everything that calls for the outlay of money. He votes for the hiring of cheap teachers and the minimum number of weeks of school. He opposes the remodeling of the schoolhouse and the improvement of the grounds, loudly proclaiming as his reasons that they were good enough for him when he was a boy and they are good enough for the present generation. If the occasion is the annual town meeting he will wade through mud up to his boot tops to vote against highway improvement and in his church he loves to proclaim that salvation is free.

And strange as it may seem because he has been able to hold down the piece of land which Uncle Sam gave him in his youth, and make something of improvements, and by dint of hard work on the part of both himself and his family may even have acquired a mortgage on the property of some of his neighbors at the expense of education and home comforts for his family, I repeat because of this, his opinion is given considerable consideration in his community as a practical man. While another man who has bought and paid for a farm at a good round figure, but believes that an education and home comforts for his family and good roads for the use of his community and living salaries for both teacher and preacher are better investments than mortgages on the property of others, may be looked upon as somewhat

visionary and unsafe by his farmer neighbors. In spite of that fact as a progressive member of the community he may be worth several times that other member who opposes New Fangled Ideas.

If the first described person is the kind you of my audience have in mind as a practical farmer, then I do not wish to qualify, for I believe in comfortable homes, good educational opportunities for all, good roads for the use of the public, good moral and spiritual environments for every community, and progressive and businesslike methods of farming. Now, having declared my articles of faith what about the seed corn situation?

The seed corn situation here in Wisconsin as I see it is simply this: at least 75 per cent of Wisconsin farmers are facing two questions; first, where am I going to get good seed corn for next season's planting, and second, what variety will be safest for me to buy?

In discussing these questions with farmers of my acquaintance, I find that there is considerable indifference manifest at this time. Seed houses all over the country from the gulf to the Canadian line seem alive to the opportunity to reap a rich harvest on seed corn and farmers are being flooded with catalogues describing wonderful varieties originated by the catalogue man that will get ripe anywhere and outyield anything ever before offered. In fact the descriptions this year are so dazzling to the eye that there is danger that they will deceive the very elect, and there is need that farmers carefully analyze the situation before placing their orders for seed corn.

The progressive farmer, (and he is the one whom I choose to consider the practical farmer) will have very little difficulty in deciding what variety or varieties he wishes to secure. For that is a matter that he has carefully worked out in past years and he will be guided by the lamp of his own experience. The corn that he wants is the corn that will give him the maximum yield and that is reasonably sure to mature in his latitude and particularly on his individual farm. It will not matter to him who originated the variety, whether the catalogue man or the agricultural college professor as performance in the field is the point on which he bases his decision and not wordy catalogue descriptions. Neither is he in need of advice in the matter for he well

knows that his own carefully worked out knowledge of the adaptability of varieties to his particular environments is the safest guide and the chances are that he is among the 25 per cent who have been able to secure their own supply of seed corn and possibly a supply to furnish the unfortunate in his own neighborhood.

In my own case there are two varieties that I shall tie to, i. e., the Golden Glow and Silver King. The Golden Glow for crib corn and the Silver King for silage. In my choice of these two varieties there is no admixture of sentiment. They were tried on our farms with the same caution that we try out new introductions and have won out hands down over every other variety that has ever been raised in our community for the purposes for which I plant them. The Golden Glow on my farm in the average season is ready to shock by Sept. 1st and gives us the maximum yield of good sound crib corn. The Silver King in the average season is mature enough for the silo by Sept. 15th and will produce several tons per acre more good ensilage than any other variety we have ever tried.

As to where to get seed corn, the Wisconsin farmer is indeed the most fortunate of all farmers on the northern edge of the corn belt, thanks to the Wisconsin Experimental Association and its coöperative work in grasping the situation early last autumn and saving a large amount of seed by the members fortunate enough to have crops of corn mature enough to produce good seed. Had it not been for the good team work done in this line last fall by this association it would take Wisconsin at least two years to get back on the map as a corn state. As it is Wisconsin farmers should be prompt to take advantage of the situation and secure their seed at once and not wait till the Wisconsin supply has been exhausted, for acclimated seed is of just as much importance as variety, and if the Wisconsin supply is allowed to go to other states and Wisconsin farmers through neglect are forced to plant southern grown seed the loss in next year's corn crop is very likely to be considerable.

Perhaps a few words for the good of the order may not be out of place at this time for never before in the history of the association has there been so great an opportunity to impress upon the farming interests of the state the usefulness of this organization. The strictest honesty and fair dealing



Cutting Pedigree winter rye which yielded 33 bushels per acre on the farm of Rob Lachmund, Sauk county.



Seed corn drying house and workshop of Oscar Miritz's, Fond du Lac. A furnace on the lower floor dries out quickly and thoroughly the seed corn hung on racks in the large attic.

should be enforced upon all its members and any departure therefrom should be summarily dealt with. In a few instances members of this organization have defrauded the public with seeds not true to name or of such low vitality as to be valueless. When their attention was called to the matter they have refused to make restitution and a man who considers a few dollars of ill-gotten gain above a good name and permanent business should not be retained as a member of the organization. So the invitation should always be out to the public to report any unfair dealing on the part of any member of this order.

Now just a few words about seed corn in general and I am through. In the corn exhibits which came under my observation during two years work with the farm institutes, it became very apparent to me that the average farmer has very little idea as to proper type in the selection of seed corn and that there is very great need of education along this line among farmers. Even Silver King with its well established type had lost its identity entirely after a few years selection of his own seed by the average farmer. In summarizing the seed corn situation I have this to say, that many farmers will be forced to plant pure bred seed corn next year that would not otherwise have done so for the very simple reason that the scrub farmer and his scrub corn lost out last season on the corn crop and the progressive practical farmer will supply the seed that he plants for the simple reason that the pure bred won the race to maturity in a trying season. The practical farmer either has seed corn of his own raising of known germination quality or else has his order placed with reliable parties who have what he wants and is not taking a long chance by waiting till planting time before he orders.

SUDAN GRASS—THE NEW FORAGE CROP

G. B. MORTIMER, Madison

There is perhaps no crop that has so completely occupied the attention of the farmers of southwestern United States for the past few years as has Sudan Grass. It has spread from Texas as a center where it was first introduced in the spring of

1909, until now we find the northern states growing the plant, as yet, largely in the way of experimentation. According to reports from the southwest no hay grass ever became so generally popular in so short a time as Sudan Grass. Undoubtedly this is due to the way in which this grass has thrived in that section of the country.

Introduction of the Plant

Sudan Grass was brought to the United States in 1909, from Africa, by Prof. C. V. Piper of the United States Department of Agriculture. This plant, like Johnson Grass of the south, is a sorghum, and in searching for sorghums without the troublesome underground stems that Johnson Grass has, Mr. Piper found this plant growing in Egypt under the name of Garawa. Only a small sample of seed was secured, the larger part of which was planted in Texas in the spring of 1909. On account of the excellent showing made against drouth and other unfavorable conditions, all of the seed was carefully preserved and planted again the next year. Again the plant gave such a wonderful account of itself, that some of the seed was disseminated among the farmers with the result that Sudan Grass now occupies a firmly established place in the farming of southwestern United States.

Plant Description

Sudan Grass is an erect growing annual. It is a very leafy plant, and will grow to a height of from three to eight feet. It is somewhat coarse, although the stems are generally smaller than the thickness of a lead pencil. The plants stool very freely, a single plant producing as many as one hundred culms.

Climatic Adaptations

Like all sorghums and plants of similar nature, Sudan Grass requires a warm season and soil for its best development, but from trials conducted in the northern tier of states it has been found that it will do very well even in the shorter growing seasons of this section. As to moisture

requirements, this plant is quite drouth resistant, due perhaps to the extensive system of fibrous roots, with which it is supplied.

Soil Adaptations

The claim is made that this grass crop will grow on most every type of soil from heavy clays to sandy soils, provided the latter are reasonably fertile. The fertile loams, either sand or clay, are undoubtedly the best soils taking every other factor into consideration.

Cultural Practices

Like the grain crops, Sudan Grass does better upon fall plowed land. This is very essential in case of the heavier soils and those that are weedy.

The preparation of the seed bed should be the same as that for corn. The young plants do not grow so rapidly at first and are liable to be crowded by the weeds early in the season, unless special effort is made to destroy them as far as possible before planting. Consequently fall plowing, together with early and frequent harrowing up to planting time, are recommended.

For a state as far north as Wisconsin, Sudan Grass should never be seeded until danger from spring frosts has passed. About corn planting time or even a week or two later seems to be the best time for planting. This grass may be seeded in close drills, cultivated rows or broadcasted. When sown in cultivated rows the usual rate of seeding for hay purposes is from eight to ten pounds of seed per acre. Under humid conditions, the best method of seeding for hay purposes is either drilling by means of an ordinary grain drill or broadcasting. Well cleaned seed feeds freely from the grain drill, is distributed evenly and an even stand is secured. Either of the above methods requires from fifteen to twenty pounds of seed per acre.

Harvesting for Hay

When Sudan Grass is grown for hay, it should be cut in full head and before any of the seeds are formed. It is at this stage that the hay is most palatable and nutritious.

Cutting for hay after the seeds have set makes hay of lower feeding value.

From central United States southward, it is possible to get two cuttings each season for hay, and in some instances as many as four cuttings have been made. The easiest way to harvest the crop is with the mower. It cures very rapidly and can be cut in the morning and raked up the next day if the weather has been bright and sunshiny. The best quality of hay is made by placing it in small cocks and allowing to cure in that way. The leaves are retained well and if handled properly the hay will be bright, leafy and sweet.

There are few grasses that are injured so little by standing beyond the proper stage of maturity as Sudan Grass. This is due largely to the fact that the numerous stools mature successively later than the main stem and hence always furnish immature stalks, even though the older ones are ripened.

The yields vary, depending largely upon the number of cuttings made. Under irrigated conditions as high as eight tons of cured hay have been reported. In Wisconsin where not more than two cuttings may be had the yield will not on an average run higher than five tons, with perhaps an average of about four.

Harvesting for Seed

The good seeding habits of this grass are one of its very best features. The seed is produced in abundance and is retained well so that loss from shattering is not very great. When the seed is practically mature, it may be cut with a grain binder, and left to cure in shocks. It may be threshed with an ordinary grain separator. The highest yields of seed are produced in the semi-arid West where dry, warm weather prevails. The yields reported range from 300 lbs. to 1400 lbs. per acre. Good seed will weigh about 40 lbs. per bushel.

Up to the present time, the seed has been rather expensive, ranging from fifty cents to one dollar and a half per pound. This is due to the fact that nearly all of the seed being used is grown in Texas. Undoubtedly the time will come when the price will be reduced to four or five cents per pound.

For Pasture

As a pasture grass, Sudan is lacking in several of the essentials of a good pasture. Being an annual plant, a turf is not formed and considerable injury from tramping would result. Undoubtedly live stock pasturing upon it would pull out many of the plants. For these reasons its use will be confined largely to hay and seed production.

Sudan Grass in Wisconsin

During the past season, Sudan Grass has been under trial as a forage crop for Wisconsin conditions. The tests conducted by the Experiment Association were based upon various rates of seeding for forage and for seed. Owing to the unusual weather conditions prevailing the past season, the plant did not get a fair test. A prolonged, cold spring followed by a rather cool summer with early fall frosts was not conducive to very good results.

The tests conducted for seed yields were entirely destroyed by the early fall frosts. Of the members of the Association reporting upon their experiences with this grass, two have reported small yields of mature seed, so that I feel it is safe to say under ordinary seasonal conditions, a seed crop may be expected in Wisconsin.

Even under the unfavorable conditions of the past season, the crop made a good showing for forage purposes. The seeding was not made until June 23, so that the yields reported were from only one cutting. Broadcasting at the rate of ten lbs. gave a yield of three and three-fourths tons of cured hay per acre. This was the highest yield of the various rates of seeding, that from the thirty-five pound rate yielding two and one half tons. From the tests conducted, it would appear that the best rates are between ten and twenty pounds of good viable seed per acre.

It would appear from the records that this plant has made since its introduction into this country, that it should find a place under certain conditions, and for various purposes in Wisconsin farming. Undoubtedly it can not become a crop of our primary rotations, taking the place of clover, alfalfa, and corn. However, on account of the increase in yield and the greater palatability of the hay, Sudan Grass will crowd millets out of the list of secondary crops

for Wisconsin. It certainly furnishes a valuable addition to the list of soiling crops, yielding large amounts of very palatable green forage.

Then too there is the seed production phase for Wisconsin farmers to consider. It is quite possible that the south will have to look to the north central states for the production of pure seed on account of the freedom with which Sudan and Johnson Grasses mix in that section of the country. If we can produce heavy enough yields of the seed some of our farmers can surely afford to raise this crop for seed alone, at least until the price of seed falls considerably from what it now is. However, we do not advocate doing this on a very large scale until we know what may be expected in the way of seed yields.

TYING CITY AND COUNTRY TOGETHER

BEN F. FAAST, Eau Claire

Tying city and country together is a subject that could well be discussed at great length. However, I am going to be brief and dwell upon only a few of the main points which I believe will help to bring the city and country closer together. My remarks will be confined to conditions as they exist in Northern Wisconsin. As to their application to Southern Wisconsin, you must draw your own conclusions.

In this age of specialization success in any line of endeavor calls for increased efficiency. To be more efficient we must specialize, and then secure coöperation between the specialized units. Agriculture, the world's greatest industry, is perhaps the least specialized and the least organized of all the great lines of activities. A farmer's first interest is in his produce; later he sees the importance of the successful marketing of what he produces. A successful farmer must produce a high grade product. This means he must become a master of the science of agriculture, must become a practical, scientific farmer. As the quality of his product becomes better, he must have higher prices for what he sells. He must build better barns, install more expensive equipment, get better stock, or put more land under the plow. In short, increased efficiency requires

more money and a specialized market for the product of the farm. This brings him face to face with the financial and marketing problem of the farming business. The proper financing of a large and well managed farm, and the successful selling of the product at profitable prices require just as detailed and scientific knowledge as does the successful production of farm produce. The question is: How many men can be a successful producing farmer, a banker, and a produce salesman all at the same time? Would not coöperation between a successful farmer, a trained banker, and a good produce salesman bring better results and more profits for all?

Let us consider for a few minutes how other big businesses are handled. When the railroad manager submits his report and recommendations for new tracks, equipment, repairs, etc., to the board of directors, they carefully go over his plans, estimate the total cost, and then take the matter to their bankers, who arrange plans for furnishing the money. These bankers either suggest short time notes or a bond issue, which later they sell to financial houses in different parts of the country. People are glad to buy these bonds or notes because they feel sure that they are good on account of the recommendations and the reputation of the banking house that is handling the railroad loan. In general this is true with the methods of financing the large packing houses, the steel industry and the big lumber companies. These large industries have special retail departments for the marketing of their products with trained salesmen, or they wholesale their product to specialized marketing companies.

How is the individual farmer going to get the same service in finance and marketing as do the large corporations? The demands of the individual farmer and the product he has for disposal are so small that it will not warrant consideration by a large bank, or sale by a large sales organization. The farmers' money needs and his products do not receive the same attention that is given to business properly handled and backed by a scientific, well organized, business and sales organization.

In practically the same proportion that the farmers prosper, so do the business men. If the city man can assist the farmer in supplementing that business training which the

farmer often lacks, it will be to the advantage of the farmer as well as to the business man. Coöperation between country and city along these lines will accomplish wonders.

Nearly every village and city in Wisconsin has a Commercial Club or Business Improvement Club of some sort. Each has a secretary whose business it is to work for the improvement of the city; clerks who specialize in the retail salesmanship so as to be of assistance to the retail merchants; some department to assist the manufacturer; in fact, there is complete coöperation among nearly all the business interests. They are working hand in hand to make their city grow and improve, to make real estate more valuable, to give the merchants more sales and to put more money in the banks, etc. These commercial clubs advertise for factories. Often they influence the city authorities to enter into agreements for refunding taxes for from 15' to 20 years to new industries. Meetings of business men and bankers are called by commercial clubs to make plans for helping finance new organizations. Often business men take stock, and bankers loan money to get many a new industry started. Advice and assistance are given; in fact, every possible help to insure the success of the new enterprise is offered the manufacturer or jobber. If any one of you should desire to locate a factory that employs from twenty to thirty people, the competition between different commercial clubs would almost result in a panic. Each one will try to outdo the other in offering special inducements to have you locate in his city.

I wonder how many commercial clubs have ever thought of attempting to locate twenty or thirty families of farmers close around their city. Are not twenty farmer families located around a city of just as great importance as twenty factory hands receiving \$1.50 a day? To show the importance, in dollars and cents, let us take a few figures.

James J. Hill is credited with making the statement that each settler who located along the line of the Great Northern Railroad was worth \$2240.00 to his company. The Canadian government and our Immigration Department has set the value of each new settler at \$1000.00. It is estimated that five thousand new families bought and settled on new farms each year. Taking \$1000.00 as a basis of value, these new farmers are worth \$5,000,000.00 a year. Taking Mr. Hill's

figures, these new farmers are worth \$11,200,000.00. Then think of the new barns, houses, the new land being cleared; the increase and improvement of live stock. Why should not the business men help the new settler get located on his new farm, help and advise him after he is located, get him acquainted with banks or loan companies and assist him in making a success of his new farm?

In this morning's mail I received a letter which had been written by a new farmer in Northern Wisconsin. The letter reads in part as follows:

"Last October I obtained and settled on eighty acres of land. There are about 5 acres cleared and free from stumps while there are about 20 acres more of which is cleared but not stumped. These stumps are mostly rotten and can easily be removed with a team of horses. It is a well laying piece of land.

"I am a hard working man and am quite anxious to make good on this land, although I am without means to go ahead and improve, so I wish to ask; can the State Department give aid in obtaining milch cows and paying for same monthly out of the earnings, allowing good interest? I will, in a few weeks, be able to go out to work a few miles from here, but at a wage that would give little aid in improving a farm. My time would be more valuable at home. I work from early until late and am assured that with such assistance as I have above asked, I can make good here, for I love the work and would take a special interest in scientific farming. I am particularly fond of cows.

"I trust this is worthy of consideration. Also kindly advise me as to where I may obtain good seeds. Other information will be much appreciated."

This letter illustrates one of the problems that some of our new settlers have to face. I think I can safely say that in most communities in Wisconsin, a farmer desiring this kind of help will find no difficulty in securing assistance from the local banks or other business institutions. There are some communities, however, that are not so fortunate, and it is in these communities that the commercial club can be of much help in assisting in solving these rural problems.

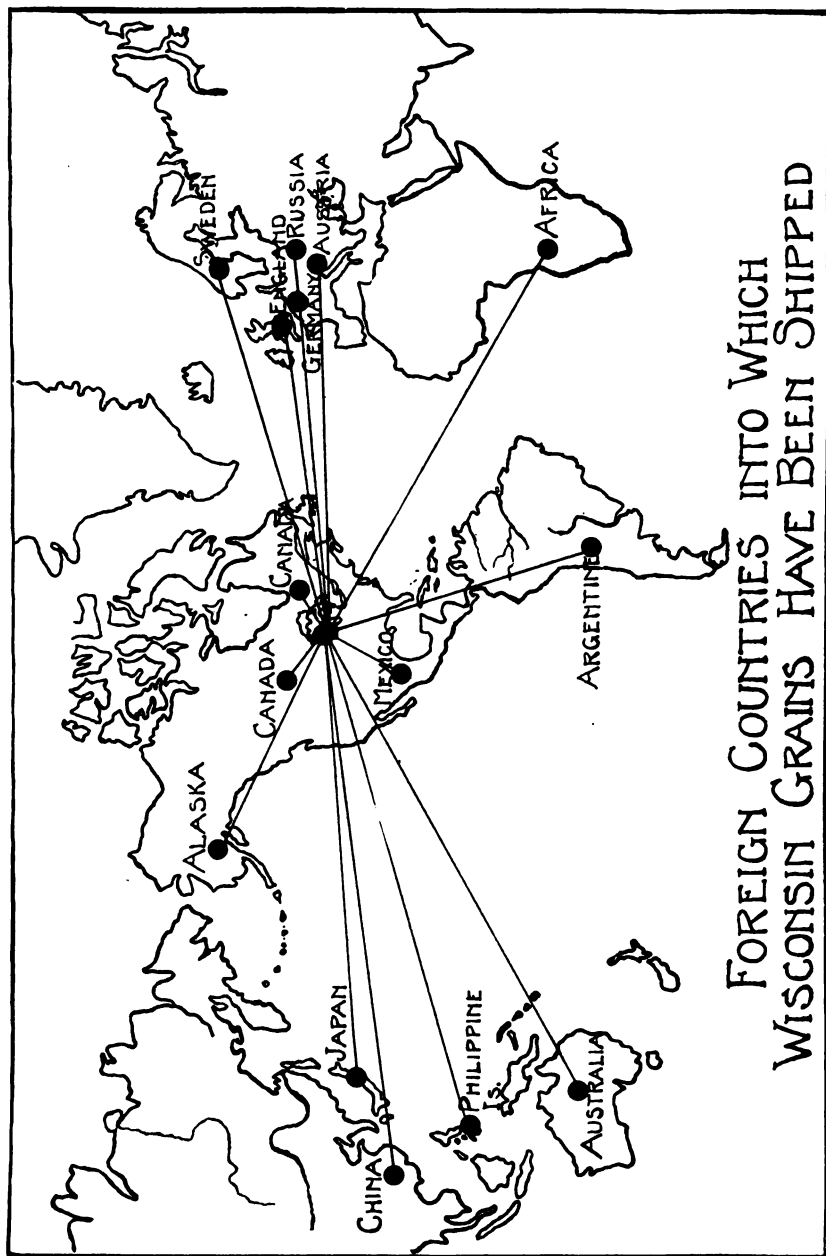
Perhaps there is no bank in the community where this man lives. If there is a good, live commercial club, this new settler could appeal to this club for assistance; it could make arrangements with either a group of business men in that community to give the needed assistance, or could take the matter up with the nearest banking institution.

There should be special committees to help solve the farmer's problems just as there are special committees to look after the problems that pertain strictly to the city. There should be a department to help the farmers with their

buildings. They should be able to go to this community club's office, and discuss the plans of new buildings with the secretary, be shown different plans, the prices of different materials, what they can be bought for in that city or village, and the advantages of each. Perhaps ten or fifteen or twenty farmers might in this way be encouraged under wise suggestion and helped to build new barns or put in new equipment. This will take considerable money. The local commercial club with its board of directors should be able to advise with the farmers and make arrangements for loaning them money for these improvements. Arrangements could very easily be made where a proposition could be submitted to the banks, and, when the bankers know that the matter has been carefully investigated and has been carefully supervised by the business men's association, they would be willing to make arrangements for extending long time credit.

Suppose, for instance, farmers felt the need of a creamery or cheese factory. Instead of going ahead and organizing a coöperative plant as many of them do, and pay enormous prices and commissions to irresponsible promoters, they could take this matter up with their own city commercial club secretary. This commercial club could investigate the situation from the most scientific sources, secure the best prices, and the bankers could get together and plan the best way to finance this new farmers' industry. A cheese factory, or creamery, could be established or one could be induced to locate there. Then the problem of how to get more cows would come up to the farmers. A committee could be selected to look after furnishing the credit if the farmers did not have the ready money. A committee of farmers, together with one or two business men, could go out and select a few carloads of cattle. There are many ways in which this kind of coöperation between business men and farmers could be carried on and greater results would be secured for both the farmer and the merchant. The cost to the business men would be much less than they are now paying to help locate new manufacturing plants in their city.

Who ever heard of a commercial club offering a farmer exemption from taxes for a number of years in a community if he opened up a new farm, or offering him a bonus if he bought land if he built fine new barns and other buildings? Why should not the commercial clubs give the same coöper-



ation,—and I say greater coöperation,—to the farming community than they do to the manufacturing industry? It is simply because this matter has not been brought to their attention. It is perhaps as much the farmer's fault as it is the business man's fault. I do not believe the initiative lies with either. I believe both farmers and business men must get together and work out the solution of this problem jointly. Every farmer here today, when he goes back home, should talk this matter over with his business men; talk it over with the commercial club secretary; urge each one of them to see if you cannot start some joint system of coöperation that will mean much, both to the city in which you have an interest, and to the farming community in which the business man has an interest.

I am glad to say that there are many communities in Wisconsin where just such coöperation as I have outlined above is being worked out between commercial clubs and farmers. The real live commercial clubs are assisting and coöperating with the farmers, and the real live farmers are welcoming this assistance from the business men and are coöperating in every possible manner with them. There should be many more communities working along these same lines. It is up to the farmers to start things moving. It will surprise you to find how quickly the business men will take to this joint coöperative plan if you will present the matter to them frankly. Get your neighbors together, if it be only a few, and call on your business men, bankers, and commercial club; and get something started along these lines.

REPORT ON ASSOCIATION'S COÖPERATIVE EXPERIMENTAL WORK.

J. J. GARLAND, Assistant to Secretary

When the Wisconsin Experiment Association was organized 16 years ago and a constitution prepared, the first article adopted was that "the object of this organization is to promote the agricultural interests of the state by carrying on experiments or investigations that shall be beneficial to all parties interested in progressive farming." For the first

few years of this association's existence its members confined themselves to purely experimental work, to the trying out of various new crops, and the best methods and practices of growing them.

Hundreds of members put in small patches of that new crop alfalfa. The members didn't know how to prepare the soil, take care of the crop or any of the details most everyone now knows. It was purely experimental work but it paved the way for our present knowledge of the best methods of handling this important crop. It was through the trial plots and fields our members put in that their neighbors and friends became interested and finally decided to try it out. And now there are thousands of acres in this state which no doubt are actually due to the many years of experimental work done by the Association members.

The prevention of oat smut was another line of experimental work carried on. Prof. Moore used to go about the state estimating the extent of damage due to this destructive pest. Then he would have some of the members try the formalin, the blue vitrol, or hot water treatment to see if this disease could be controlled. Thanks to the excellent work done by the members in coöperating with the association, oat smut was practically banished from Wisconsin and the entire state felt the beneficial effect of that experiment.

In 1904, 100 members reported on growing the Swedish Select oats, a new variety just secured from abroad, and it was found that this variety was well adapted to our conditions. Since that time, Swedish Select oats have become known to practically every farmer in the state whether he ever heard of the Experiment Association or not.

The Pedigree No. 1 oats soon afterwards came into existence for it was bred up to overcome the weak straw of the Swedish Select oats. However, this fact was not firmly established and the oat recommended for general growth throughout the state until hundreds of the members had grown the Pedigree No. 1 in an experimental way and found that under farm conditions the oat was superior to other varieties for richer soils.

Other experiments with rape, Soy beans, and other crops were planned. The different methods of sowing, time of seeding, planting and cultivation and use of the crop were tried out and reported on each year. This work helped to

spread the knowledge of better methods and profitableness of the new crops.

The name and fame of the new varieties of grains which our members were growing created an unusual demand for the seed and the Association Experimenters became disseminators of the new seeds as well as of the information concerning the new crops. And even up to the present time or for the past five years the association has been extremely busy spreading the culture of these more profitable varieties and has somewhat neglected the purely experimental side of its work.

But the Experiment Association last year began a somewhat new order of experimental work when it undertook the problem of trying to find out if some sort of a fertilizer wouldn't help in the production of better seed corn. Our corn breeders know as well as every farmer who tries to pick show ears or seed corn that good well formed ears are hard to find. For some reason or other there is a very small percentage of the corn that will do to save for these purposes.

Where a man has his corn field on poor land, the chances of finding good ears are very small and only a very little corn is of good type. Where the corn field is on alfalfa or clover sod which has been well manured and is in a good fertile condition the percentage of good ears is very much higher.

Most of us know something about the chemistry of the soil and realize that there are 3 or 4 principal elements or minerals that a plant needs to feed on to produce a big thrifty growth and good seed.

Nitrogen and potash are two of these elements that the plant feeds upon to a large extent. And according to some of the authorities on soils, these two elements can be found to a considerable extent in most of our soils, or they can be restored if the supply is depleted by a good system of crop rotation and manuring of the land.

But phosphorus, the third important element for the plant, cannot be restored so easily to the soil if it is once lost. But it is the cheapest of these elements to purchase and can thus be added if it is found to be lacking.

The chemist tells us that phosphorus has a very important rôle in the development of a plant's seed or grain. If we analyze a corn plant, $\frac{3}{4}$ of the phosphorus taken out of the

soil is found in the seed or ear. A hundred bushel crop of corn takes 23 pounds of phosphorus out of each acre of soil and much is lost each year by being leached away. It is known that if there is a lack or scarcity of phosphorus then the formation of the seed or ear is retarded and we do not find as good or heavy a crop of ears as is desired. Also the chemist tells us that phosphorus hastens the maturity of a plant. It can form its seed and cease growing much sooner if there is plenty of this phosphorus in the soil. This brings to us a very important thought. If we could feed our corn plants enough phosphorus why wouldn't they mature sooner and produce a better quality of ears which is a thing every corn grower wants?

Of course, this can be possible only to a limited extent for all the other elements of plant food, as well as heat, moisture and soil conditions are factors which must be taken into consideration. But if we could hasten the maturity of corn a week or increase the percentage of seed ears 10 per cent perhaps it would still be profitable.

Your association is therefore experimenting to see if the addition of a Phosphate fertilizer wouldn't help some or at least enough to make it profitable to the farmer who wants to get a high percentage of seed ears.

Last year a proposition was made to a number of the older members of the association whom we thought might be interested in this experiment and would care to try it out. The association was to furnish a bag or two of acid phosphate to a member if he would agree to spread it according to direction on two $\frac{1}{4}$ -acre plots in his cornfield. The plot was to be marked off and at harvest time the corn husked off the two fertilized plots as well as an equal plot of the field that had received no phosphate.

Two bags of 125 pounds each were sent eight members, who were to apply it at the rates of 600 and 400 pounds per acre, which would be 100 pounds and 150 pounds on the $\frac{1}{4}$ -acre plots. One bag of 125 pounds was sent 32 members, who were to apply it at the rate of 300 and 200 pounds per acre.

Five men have never sent in any report as to the use or results with the fertilizer. Seven others sent in a letter saying that no report could be made, while the remaining 28

members reported as well as they were able the results obtained.

The following brief extracts from the member's reports will show the results obtained with last year's experiments:—

Otto Oimoen, Barneveld, (1 sack) No. 12 corn, clay loam soil.

Could see no difference between plots regarding maturity, vigor or size. Grubs bothered.

W. G. Jamison, Appleton, (1 sack) No. 7 corn, clay loam soil.

Plot which received 200 lb. rate fertilizer, *manured spring 1915*, 300 lb. plot and check, *manured in 1914*. This plot with 200 lb. rate had ripest corn, largest ears and stalks on this plot. However, ears on 300 lb. plot larger and stalks taller than on check.

Jippa Wielinga, Midway, (1 sack) No. 12 corn, sandy loam soil.

The corn on fertilized plots matured a little earlier than on unfertilized, also had larger ears, and taller stalks.

Arthur O. Popp, Jefferson, (1 sack) No. 12 corn, clay soil.

It seemed to me that fertilized plots had heavier stalks. A neighbor said he could see a line through field one side being taller, this corresponded to the blank and fertilized plots. Fertilized plots seemed less mature when frost came.

H. T. Draheim, Gotham, (1 sack) No. 7 corn.

As this was a cold year, corn came up rather uneven and I could not see any difference until it was about 12 inches high. Then I noticed it had a rather dark green color. Neighbors often asked me what made that strip of corn such a dark green color. I explained to them and they were so interested they were going to help me husk and weigh up the crop.

I don't think it grew taller but the fertilized plots silked out earlier. On August 7th we had one of the worst hail storms that ever visited this country and the crop was ruined.

John Van Loon, La Crosse, (1 sack) No. 12 corn, sandy loam soil.

Results obtained were in a measure unlooked for in that there was not a great deal of difference in total weights of each plot. The most marked results were noticeable in the quality and earlier maturity of the crop on the heaviest fertilized plots, and I am convinced that it will pay to follow it up.

A. L. Thompson, Blair, (1 sack) No. 12 corn

Our corn froze in August hence impossible to make any comparison. Will state that plants on plot where fertilizer

was applied looked more vigorous and grew taller than unfertilized.

Fred Voight, (1 sack) No. 12 corn.

Plot on which 200 lb. applied could easily be seen from any part of field, also that on which 300 lb. was applied, and the latter plot grew faster than where 200 lb. put on. Six check rows along fence and between the two plots looked scrubby. I could see fertilizer was of great value to corn.

Chas. H. Howitt, Randolph, (1 sack) No. 12 corn, clay loam soil.

As my corn froze it is impossible to get accurate results from the experiment. Grubs worked in it and affected some hills worse than others.

Homer Miller, Pickett, (1 sack) No. 7 corn, clay loam soil.

Could see no difference in maturity, size of ears, or stalks. Corn froze and the field the plots were on didn't develop as it should.

H. N. Longley, Dousman, (1 sack) No. 12 corn, silt loam soil.

From start to finish the fertilizer plots led off and kept ahead of unfertilized plots. No difference in maturity on two fertilized plots but they were more mature than unfertilized. Ears larger on fertilized plots, also larger and more vigorous growth of stalks.

W. C. Wright, Eau Claire, (1 sack) No. 12 corn, clay loam soil.

Found more mature ears on plot which had 200 lb. rate. Stalks stood up better but could notice no difference in height or vigor, neither in size of ears.

William Schwandt, Deer Park, (1 sack) No. 8 corn, clay loam soil.

The corn on the fertilized plots showed a marked improvement from the start and was somewhat better matured.

Martin De Boer, Midway, (1 sack) No. 1 corn, black loam soil.

Where heaviest amount of fertilizer was applied corn grew a little faster and was better matured. Ears were all about same size although stalks were a little larger on fertilized plots.

Elmer F. Thibodeau, Luxembourg, (1 sack) No. 12 corn, silt loam soil.

The corn didn't mature on any of the plots and could see no difference between plots in regards to maturity or size.

C. S. Ristow, Black River Falls, (1 sack) No. 7 corn, clay soil.

Could see no difference between plots.

H. J. Block, Burlington, (1 sack) No. 12 corn, sandy loam soil.

On heaviest fertilized plot could notice a slight difference as to maturity.

Guy Trelevan, Omro, (1 sack) No. 7 corn, clay loam soil.

I don't think it advisable to drop that amount of fertilizer, 200-300 lbs., directly on the hills as I find it strong enough to burn the young plants under certain weather conditions. Our past experience has been to drill the fertilizer. We find there will be enough in the hill and the roots will find the rest as the plants grow. From start to finish fertilized plots led off and kept ahead of unfertilized plots on same kind of soil.

J. R. Thorpe, Tavera, (1 sack) No. 7 corn, clay loam soil.

I could see no results this year. The continued wet weather and frost mixed corn so it wasn't worth harvesting.

Fred Crebe, Fox Lake, (1 sack) No. 12 corn, loam soil.

Corn had to be replanted on account of bad weather. Could see no difference in plots.

Kaltenberg & Sons, Waunakee, (1 sack) No. 12 corn, black loam soil.

No difference noticed between fertilized and unfertilized plots. Corn didn't mature and no seed picked.

YIELDS OF CORN FROM PLOTS FERTILIZED WITH ACID PHOSPHATE.

Rate of fert. application	Size of plot in acres	Lbs. ear corn produced from plots			Lbs. seed ears selected from plots			Bu. ear corn produced per acre			Bu. seed ears produced per acre		
		75	50	Ck.	75	50	Ck.	300	200	Ck.	300	200	Ck.
Van Loon.....	1/6	894	879	799	666	623	529	67	66	60	50	47	40
De Boer.....	1/4	1200	1147	1080	880	907	833	60	57	54	44	45	42
Schwandt.....	1/71	93	92	84	8			83	82	75			
Block.....	1/17.7	394	376	372	5			87	83	82			
Popp.....	1/49.3	100	111	102	30	32	29	62	68	63	18	20	18
Miller.....	1/115	435	49	43.5	4	8.5	3.5	63	70	63	6	12	5
Longley.....	1/4	860	840	700	320	300	240	43	42	35	16	15	12
Ristow.....	1/4	984	1032	1080	5			49	52	54			
Wright.....	1/4	908	694	605	255	280	195	45	35	30	13	14	10
Wielinga.....	1/30	257	244	239	175	160	150	96	92	90	66	60	56
Jamison.....	1/4	556	4772	562	52	69	11	28	39	28	3	3	.5
Average.....								62	62	57	27	27	23

1. 32 lbs. fert. applied

2. 624 " " "

3. 3550 hills per acre used.

4. Manured spring 1916.

5. No seed corn selected.

This table showing yields of corn from fertilized and check plots is made from reports of members who received one 125-pound bag of the acid phosphate. This bag was divided

into 75 and 50 pound lots and spread on $\frac{1}{4}$ acre plots in the corn field. At harvest time the corn grown on the plots was husked and weighed, in some instances only a certain number of hills were husked and weighed. The number of hills husked being figured on the acre basis using 3550 hills per acre.

The first column gives the name of the experimenter. The second, that part of an acre weighed up. The total yield in pounds of corn grown on the fertilized and unfertilized plots is given in the next three columns. In the next three columns the amount of seed ears that were selected from the total production. The last six columns gives these weights reduced to bushels per acre using 80 pounds of corn to the bushel.

In nearly every instance the total yield of corn from the fertilized plots was more than that from the check or unfertilized plots and the average increase from the use of the fertilizer was 5 bu. per acre. The use of the 300-lb. rate per acre did not appear to give any better results than the 200-lb. application. In some instances the yield was less so that the average increase from both was the same.

The total yield from the fertilized plots averaged much better than the general yields of corn as reported to the Secretary from all the members of the association, while from the check plots the yield is only slightly better. In some cases the corn when weighed was not mature so consequently the yields are heavy. Yet most of the members who tried out the fertilizer had seed corn to sell this spring so it has proven that some mature corn was produced.

The amount of seed ears that were saved from the total yield is interesting to note and it shows that in some fields a high percentage of good seed ears were found. The officers of the association have always believed that it was best for the corn growers not to save too large a percentage of the corn for selling as seed corn as it is better to keep the quality high.

REPORTS FROM EXPERIMENTERS WHO APPLIED
ACID PHOSPHATE AT 600 LB. AND
400 LB. RATE PER ACRE TO PLOTS.

O. F. Miritz, Fond du Lac, (2 sacks) No. 7 corn, clay loam soil.

On heaviest fertilized plots stalks taller and corn better matured, also ears a little more uniform.

Weights. Picked off 50 average ears from each plot. No difference in weights.

Lawrence Buckley, Kilbourn, (2 sacks) No. 12 corn, clay soil.

Corn on fertilized plots seemed much nearer maturity than on other. No difference noted in regard to vigor or quality. Weights secured on only two plots account of white grubs.

Weights—400 lb. rate	80 lb. seed ears
check	70 lb. seed ears

J. A. Brunker, Ridgeway, (2 sacks) No. 12 corn, clay soil.

There was a large percentage of matured corn on 400 lb. plot, also the ears were larger.

	total
Weights—600 lb. rate	30 lb. seed ears 798 lb.
400 lb. rate	20 lb. seed ears 1155 lb.
Check	26 lb. seed ears 869 lb.

L. M. Hanson, Eleva, (2 sacks) No. 12 corn, loam soil.

Could notice no difference in maturity or growth. The phosphate, which was applied by hand to top of hill, seemed to make the soil very hard and plants have trouble coming through.

Weights—600 lb. rate	69 lb. ears
(40 hills) 400 lb. rate	68 lb. ears
check	61 lb. ears

Edw. L. Holt, Kenosha, (2 sacks) No. 12 corn, black loam soil.

Fertilized corn larger, plumper and more mature than other, the heaviest treated being decidedly better.

Weights—600 lb. rate	168 lb. ears
400 lb. rate	25 lb. ears
check	74 lb. ears

Stock broke in and destroyed much of corn on plots so weights not accurate.

SOY BEAN GROWING CENTERS

Last year the Experiment Association undertook the establishment of soy bean growing centers for the production

of seed so the increasing demand could be supplied. Twenty pounds of seed and some inoculated soil were sent to about thirty members with directions for growing the crop.

The varieties tried out were Ito San, a yellow bean and the best variety ever grown at the University Farm, the Medium Early Green, a green bean of earlier maturing qualities, and The Wisconsin Early Black, a small black bean adapted to regions where earliness is desired if seed is to be produced.

The need of good Wisconsin grown seed is very apparent and our members could make this a very profitable farm crop. Soy beans are especially desirable on account of their ability to produce a big amount of hay or forage on sandy soils. They also have the power to add nitrogen to the soils and build up the fertility by means of the great masses of nodules produced on their roots.

It is very important that the land or beans be inoculated with the proper bacteria. A much better growth is made when the plant is inoculated and more and better feed produced. Soil for inoculating the beans can be secured from the Experiment Station at Madison, or any of the Branch Experiment Stations. Or a liquid culture can be had free of charge, by writing to the Bureau of Plant Industry, Washington, D. C.

Our experimenters did not have very good success in growing the soy beans for seed last year owing to the extremely unfavorable season. Soy beans can withstand dry weather and heat better than wet cold weather. However, most of those who put in soy beans are enthusiastic over the crop for very good hay and forage was secured.

This coming year about double the number of members will be furnished seed and with a favorable season there should be some good fields of seed produced.

The following are short reports from the Experimenters as to their experiences with the crop:—

Elmer F. Kopp, Eau Claire, Eau Claire county, Sandy Soil Medium Early Green variety.

Soy beans are a coming crop in this locality for sandy soils. I planted the beans June 15th and they were ripe by September 22. I planted some with a cornplanter and some with sugar beet drill. Those planted with drill were too shallow and not thick enough. Those planted $2\frac{1}{2}$ to 3 inches deep grew



Always inoculate soy beans. The first row was not inoculated, its growth is much inferior to other rows where seed was mixed with soil from old soy bean field.



To produce better seed corn acid phosphate is needed on some soils. The row in center of picture was not fertilized.

faster. Therefore I would advise planting with corn planter, rows to be same as corn and hills from 8 to 10 inches apart and 4 beans in a hill. The plants then stand up better and have more pods.

I think early black best because the beans are tougher and harder to crack in threshing. When threshed with a regular Case separator with all concaves in, $\frac{1}{4}$ of beans were cracked but these were easily cleaned out with a fanning mill. I have 25 bushels early black for sale and will furnish inoculating dirt free.

Roy Burnell, Chippewa Falls, Eau Claire county, Sandy Soil Medium Early Green variety.

I think the crop would make a good hay crop and if plants had matured they would have averaged 12 bushels of seed per acre. Hay fed to cows and some like it while others would not eat it.

H. A. Cook, Arena, Iowa county, Sandy Soil.

According to my short experience I think they are very profitable. I planted them on the poorest soil we had but still they yielded good. If I had planted them on good ground would have gotten a much better crop. I turned cows in on the beans and the milk flow increased. The cows and horses seemed to enjoy them. There was quite a difference in height of plants where some were left uninoculated.

Milo E. Niles, Mauston, Juneau County, Sandy Soil. Medium Early Green.

I think the crop a success in this locality only a little late. My crop grew fine and was about 4 feet high and very heavy.

Secured three bags of seed which has been distributed in this neighborhood for seed.

Where plants were uninoculated they were smaller.

Arthur H. Peterson, Nelsonville, Portage County, Sandy Soil Ito San variety.

I think soy beans an excellent crop for soiling, green manure or late summer pasture. They make a good growth on sandy soil. We have 9 acres that will be put into soy beans for pasture and I think we will get more good from it than any other crop.

J. M. Larson, Knapp, Dunn County, Sandy Loam Soil Medium Early Green variety.

I think soy beans a good crop to raise but on account of cold weather didn't mature. Crop was put in silo. I would plant soy beans next year but have rented my farm.

J. S. Kent, Rusk, Dunn County, Sandy Loam Soil Wisconsin Early Black variety.

I like soy beans very well to feed with corn either in pasture or out of bundle. They also make good hay. I find that

horses like plants very well. Have not been able to get very large yields of seed so far.

*C. W. Meacham, Downing, Dunn County
Wisconsin Early Black variety.*

I am well pleased with the beans as a crop and expect to plant them next year. The season was too wet and cold for the beans, also the rabbits and woodchucks did a great deal of damage. The straw was fed to horses and sheep dry and they liked it.

*Geo. W. Prochaska, Friendship, Adams County, Sandy Soil
Ito San variety.*

Soy beans can be used in place of clover when it fails. We fed them to hogs and they picked up every bean. Cows ate stalk and all. Also fed to calves and sheep. Stock ate soy beans in preference to corn fodder.

*F. E. Huser, Cumberland, Barron Co., Clay Loam Soil
Wisconsin Black variety.*

We had a very wet cold season, otherwise the soy beans would have been a fine crop. Had a perfect stand and good growth but cold prevented maturity. Plants fed green and well liked by both hogs and cows.

John Vaughan, Unity, Clark County, Clay Loam Soil

We had a very good growth, plants $2\frac{1}{2}$ to 3 feet high but were killed when blossoming. Under favorable weather conditions it might prove a good crop.

*Geo. Buehler, Medford, Taylor County, Sandy Loam Soil
Wisconsin Early Black variety.*

Considering unfavorable season results proved very gratifying. Plants attained a height of 3 feet where drainage was good and soil was more light and sandy. They made about 2 tons of hay per acre.

Where plants were uninoculated plants were not as large and hardy.

*Ernest Thoma, Sugar Bush, Waupaca County, Sandy Loam Soil
Ito San variety.*

I think it is a good crop to mix with corn and plant for silo; have done it for years and my neighbors do it also.

*A. M. Harris, Plainfield, Waushara County, Sandy Soil
Medium Early Green variety.*

Do not think the Green variety early enough for this locality. Perhaps with a more favorable season they would have matured.

The roots were loaded with nodules and I think it a good crop for sandy soil if for no other purpose than to plow under,

C. G. Bridgman, Wautoma, Waushara County, Sandy Loam Soil

Medium Green variety.

I believe that the crop will be a good one to raise. When once established I think it will do well here. I should like to increase the ground planted next year if I can get the seed.

E. W. Roberts, Wild Rose, Waushara County, Sandy Loam Soil

I thought the soy beans were good. They had many more nodules on the roots than alfalfa or clover.

A. F. Jacobs, Coloma, Waushara County, Sandy Loam Soil Ito San variety.

I believe they will be a very good crop to raise on our soils especially as a green manuring crop and for hay. Perhaps the Ito San variety would get ripe in a more favorable season.

Soy beans ought to be good also to take the place of clover when that crop fails in the rotation.

I had $\frac{1}{2}$ acre of the Early Black variety which got thoroughly ripe. Cut them for seed, getting 6 bushels.

SOIL MANAGEMENT FOR A GOOD CORN CROP

NOYES R. RAESSLER, Beloit

If we expect to handle the soil to its highest efficiency, we must determine its functions and then do our best to provide favorable conditions for performing them.

The soil must furnish a home for the corn crop and must feed it as well. The roots of the plants must be enabled to penetrate deeply into the soil, forming an anchorage against winds and storms. It must act as a storehouse, with an abundant supply of plant food and moisture. At the same time it must serve as a laboratory in which chemical changes and bacterial action can place the plant food in proper form for the use of plants.

To be sure most soils perform *part* of these duties, but to be highly productive a soil must perform them all. Many soils contain ample supplies of plant food but fail to produce satisfactory results because of their poor physical condition. To effect the improving of the physical condition is to supply a better home for the plant and to furnish more favorable conditions for the making of plant food.

Thorough drainage, the liberal application of manure, good plowing and cultivation at the proper time are means by which the physical condition of soil may be improved.

As corn requires a very large amount of plant food (especially nitrogen) during its season of growth, one of the greatest problems is how to supply this in the cheapest way. Fortunately the clover crop thrives in Wisconsin. When this is supplemented with manure, we have little difficulty in securing a good supply of *organic matter*, loaded with nitrogen and in the most *available* form. Therefore we will select a clover sod for our ideal corn ground. In the majority of cases there is a decided advantage in fall plowing. The work can be done at a time of the year when both men and teams are not so busy as during the spring rush, and there is a better opportunity of getting the corn planted on time.

Presuming our clover sod has received a liberal application of manure, we will plow it to a depth of about six inches and leave it exposed to the weather until spring. On bottom lands it may be advisable to plow somewhat deeper, but in any case we must avoid going much deeper than has been practiced previously. The turning up of raw subsoil is sure to bring about disastrous results unless it is done very gradually.

In early spring the disc harrow is used to thoroughly work up the ground. This must not be delayed, as evaporation and baking of the soil will soon form lumps. The first crop of weeds is destroyed before they have come through the ground. And this, by the way, is the most economical and effective method to destroy weeds at any time. In a few days the disc is again applied. Now, we are turning up more weed seeds and as they receive the warmth of the sun, germination takes place only to be destroyed a little later by this same process. This is continued at weekly intervals until planting time.

Now we have a warm, mellow seed bed, millions of weeds and insects are destroyed and we are in time to get our corn planted in good season.

The depth of planting plays an important part in securing a good stand of corn. Very often in a mellow seed bed there is danger of getting the corn planted too deeply. The past season a great many farmers planted their corn over for the second and third time before they discovered the real cause

of the trouble. Corn cannot germinate in cold ground. When we plant 3, 4 or 5 inches deep it is beyond the reach of the sun's warm rays. Especially is this true of early planting.

After planting a light rolling is helpful in securing more even and rapid germination. This is followed by the harrow to avoid danger of washing in case of rain or evaporation, in case of drought.

Harrowing should be continued at weekly intervals until the corn is up, and then it may be supplemented by the weeder or used continually until the corn is large enough to cultivate.

Cultivation

It is especially important to keep the corn in a good, thrifty growing condition in its early stage of growth. When once stunted, it never fully recovers. Cultivation is not alone for the purpose of killing weeds, but the object is to maintain a good mellow tilth until the corn shades the ground. If we wish to cultivate deep, there is little danger to the corn roots if done the first time; however, there is little use in going down more than three inches at any time. With our improved surface disc and eight-shovel cultivators, better results are often obtained by going down less than three inches after the first time through and finishing up at a depth of about one inch.

If we take the trouble to continue late cultivation from the time the crop is ordinarily laid by, until the tassels appear, we can add bushels to the crop much cheaper than any other way. At this period the corn requires a tremendous supply of plant food. If the surface of the soil is undisturbed, a crust soon forms, promoting quick evaporation of moisture. And as rainfall is usually scant at this time our crops cannot make the best use of what plant food is contained in the soil, consequently we can hardly expect a full yield.

The little 12-tooth cultivator is just the thing to keep a crust from forming and if used often enough will prove about as profitable an operation as any work done up to this time. True, this may seem impracticable to the more extensive corn grower with his 200-acre fields and two-row cultivators, but my subject is "How to Produce a Good Crop of Corn" and not a cheap one. I have tried the latter but found it too expensive in the end to be considered profitable.

STATE FREE EMPLOYMENT OFFICES AND FARM
HELP

TAYLOR FRYE, DEPUTY OF THE INDUSTRIAL COMMISSION

This subject is called to your attention because the Industrial Commission feels certain from past experience that the Free Employment Offices can be a practical help to farmers of this state in securing farm hands. Employment offices, under the direction of the Industrial commission, and free to both employer and employee, are located at Superior, Oshkosh, La Crosse, and Milwaukee. During the last few years, on account of the industrial depression, it has been difficult for men to secure work in the cities. Large numbers of good men have been out of work through no fault of their own. Some of these men have had experience on farms and are willing to take farm work if they can get it. These men are not hoboes. Some of them are foreigners from Europe, who are anxious to work on the farm until they can get enough money to get a little land of their own. Others are men who left the farm and went to the city allured by what seemed to them the high wages paid to city workers. They learned their mistake and in many cases are glad to go back to the farm. Others still, are men who have lived on rented farms and have been displaced in one way or another and have gone to the city to find work.

People of all nationalities are found among the applicants for work. It sometimes happens that applicants can speak little or no English. If the employer is willing to put up with the trouble and annoyance of teaching the man to speak the language, he may be able to secure such a man at comparatively low wages. Competent men are sometimes found who have no money to pay their fare to the place where they are wanted. In such cases the farmer is notified that if he will advance the necessary railroad fare the superintendent of the employment office will buy the ticket and check the man's baggage to his employer. The fare may then be held out of the man's wages. In such cases the money is not put into the hands of the employe; the officials of the office buy the ticket, place the man on the train and start him for his destination. During the year 1914-1915, quite a large

number of men were sent out in this way and only one man failed to reach his employer.

The office cannot guarantee that a man will prove satisfactory. Great care is exercised in selecting the man for the job. No man is sent out who has not had farm experience and every man is questioned closely as to what his experience has been and what kinds of work he has done. If a man who claims to have worked with horses on a farm does not know the difference between the hames and the bridle of the harness, it is assumed that he is not telling the truth and he is not sent out.

In making application for help, the farmer should be careful to state the age and nationality of the man desired; the wages to be paid, the kind of work to be done; whether or not he wishes a married or a single man, and the probable duration of the employment. All of the conditions of employment should be made very definite in the order. This will save time and possible misunderstandings. It is fair to say that the offices have been very successful in placing men who "made good." During one year in which some 2000 men were placed, less than half a dozen complaints were received. It unfortunately happens occasionally that there is dissatisfaction. Sometimes this is due to the shortcomings of the man and sometimes to those of the employer. There is no possible way for the offices to avoid this and prevent an occasional misfit.

After the application is sent to the employment office, the farmer should notify the office promptly when a man is hired. This is necessary in order to avoid sending men out on expense only to find that the job has been taken and also to avoid any liability for damages on the part of the person giving the order.

In case the farmer needs a man on a hurry order, he may use the long distance telephone and the order will be attended to promptly. The Milwaukee office has by far the largest number of applicants for farm work. A farmer needing help might arrange to visit the office and look over the applicants before hiring. If he contemplates doing this, it would be a good plan to write to the office asking advice as to when to make the trip.

The offices have frequently been able to fill orders for married couples to take charge of both farm and housework.

Of late the industries have been using a largely increased number of men. Applicants for farm work are therefore less numerous than formerly. For this reason an office may be unable to fill a given order promptly, and occasionally, may be unable to fill it at all. Up to date, however, they have been able to fill a very large majority of orders. Following are the addresses of the different offices:

Free Employment Office, 241 Fourth St., Milwaukee, Wisconsin.

Free Employment Office, City Hall, Oshkosh, Wisconsin.

Free Employment Office, City Hall, La Crosse, Wisconsin.

Free Employment Office, 813 Tower Ave., Superior, Wisconsin.

GROWING GRAINS FOR EXHIBITION

H. T. DRAHEIM, Gotham

There are many different ways of growing and preparing grains for exhibition, but from my own experience I found it necessary to first study the soil and sow the seed that is best adapted to my particular soil and climate. There is just as much difference in pure bred seed grain and common variety of seed grain as there is between pure bred stock and common variety of stock. I don't think any exhibitor would try and improve his stock with a scrub sire nor try to improve his grains by growing the common variety of seed. So I would advise every exhibitor to grow nothing but pure bred seed grain.

Then how to prepare the soil—you all know what rotation farming means, clover, corn, oats or barley. Each crop to be on the land one year. I do all my plowing in the fall for small grain and in the spring give a light disking and harrowing several times. Go over the ground with a plunker or roller as this will crush all the lumps and leave a fine dust mulch. You will be surprised to see how even the grain will come up and also how even it will grow until harvest time. Clean your grain well with the fanning mill and treat for smut with the formalin, then sow it with a drill.

I cut when ripe but not too ripe, as grain will lodge and shell out if left too long uncut. When shocking always make a long shock, a dozen bundles are plenty. Some prefer a round shock but I have found in wet weather the long shock

dries out better and the grain will not get moldy or color as quickly as in the round shock. Stacking is very important also, but see that your grain is fit, as it will heat and discolor if stacked when wet. After proper care has been taken with your crop you will be surprised to see how bright are the grains.

Now, I am sure every exhibitor feels proud of his blue ribbons, for it means as much for his grain as A. R. O. records mean to a stock breeder. I think every farmer should exhibit grain at the County Fair or at the Annual Grain show at Madison. It gives the exhibitor a chance to study the true types of corn, also the prize winning grains and sheaves, and if you win a blue ribbon it is a good boost for your community. Then when these samples win at National Grain Shows it brings more credit to our state and it shows the good work done by the Agronomy Department in developing these pure bred seed grains, which are carrying off the highest honors wherever exhibited.

Growing good corn for exhibition is a rather harder proposition and is something that cannot be accomplished in a few years. I think there isn't any variety of seed neglected so much as corn. A great many farmers get in a hurry about planting time and neglect to do the work properly. If about half of the corn comes up then they will replant with almost any kind of seed whether it be flint or scrub. They are not very particular but expect good corn and to win prizes at that. Such corn will get mixed and may not even mature. Some ears will be ripe, others only dented, while some may be nothing but small nubbins.

Now start right and don't think that just because you grow white corn, it is the true type of Silver King (No. 7). I am sure you would not think just because you owned a cow that had black and white spots, she was a pure bred Holstein and a true type of a dairy cow. First get the variety best adapted for your climate and locality and plant the true type of seed corn.

Plant on manured clover sod. Fall plow and give a double disking and a good harrowing. Then plank before planting as this will leave the ground even and smooth. Have every ear of corn tested before planting. Wait a few days, then harrow again as this will break the crust that forms after

rains. Dragging will help while corn is small. First time cultivate rather deep, then after, cultivate shallow.

When your corn is ripe select your seed ears only from the stalks that have matured evenly and have the very best ears. Now select the best ten ears you can find and enter them at your County Fair or Grain Show. But don't expect a blue ribbon the first time or be disappointed if you don't get one. There is glory in defeat.

From here on you will have learned a lesson and get real interested, so try a few ears in a special seed plot, or ear to row method, any way to grow prize winning corn. You will be surprised to see that there is more to learn about growing and selecting prize winning corn than you expected. Now I hope the readers will not think me a book farmer for this is the method I used in growing the grain that won the most blue ribbons at the Annual Grain Show last year.

COÖPERATIVE MARKETING OF LIVE STOCK

R. M. ORCHARD, Muscoda

For several years the marketing of live stock was an interesting problem to me. It had always seemed to me that there must be some method by which a farmer could get his live stock to market without putting a profit into the pocket of a local stock buyer. It had seemed to me that the farmer was the one man that "got his," both going and coming. I know of no place in marketing that the farmer sets the price upon his product. In other lines of work, the producer usually sets the price on his wares.

Prosperous farmers in every community have for years shipped their own stock to market provided they were fortunate enough to have a carload. In our little community we reasoned that if it was profitable for the farmer who had a carload to ship his own live stock it would be profitable for several farmers to go together and make up a carload and ship it. Our experience has proven that our reasoning was correct and that all that was needed was an organization and system to make it effective.

Our organization is a very simple one and consists of a group of farmers who have agreed between themselves to

ship their live stock together. This group of farmers got together in November, 1913, and decided to give the plan a trial and selected a President, Secretary-Treasurer or Manager, and Yard Man.

A farmer who desires to ship live stock with us must list his stock with the manager. The manager keeps a book on his desk in which he puts down the name of the farmer, the number of animals he has to ship, the kind of animal and the approximate weight. One farmer may have a dozen hogs, another twenty hogs, another one hog, another a calf, another a cow, etc. When the manager sees from his record book that he has a car of hogs or a car of cattle or sheep as the case may be, he steps to the telephone and calls the railroad company and tells them he wants a stock car on a particular day. He then calls up the various farmers that have stock listed and tells them that on a certain day they can bring in their stock.

On the day appointed, the stock is received at the yard by the man hired for that purpose, who weighs the stock and marks it. He keeps a list of the stock brought to the yard, the weight and the mark that has been given each shipper. The stock is then loaded and shipped either to Chicago or Milwaukee, depending upon the size of load, the quality of the stock, etc.

When the stock is received at the central market it is unloaded, fed and watered. If it is a shipment of cattle the cattle are sorted according to owners. If it is a shipment of hogs, they are sorted according to grade. It is possible to sort hogs according to owners also, but the result is a heavier shrinkage than by doing the other way. The live stock is sold and weighed and the commission house to whom the stock was shipped, deposits the money in a bank to the credit of the Shipping Association the day the stock is sold.

You may ask how does the commission man know how to sort according to owners? My reply is, the manager prepares a shipping bill the day the stock is shipped, setting forth the name of the owner, the weight of his animals and the mark. This shipping bill is mailed to the commission house handling the stock in the central market and reaches there as soon or sooner than the shipment of live stock.

After the sale in the central market the commission house makes a report of the sale to the manager of the association.

in which he sets forth the amount charged for freight, yardage, commission, insurance and feed, and this is deducted from the gross amount of the sale. Upon receipt of the report from the commission house the manager prepares his sales sheet in which he sets forth the home weight, the central market weight, the central market price, what the individual's stock brought at the central market, the individual's share of the central market expense, the charge against the individual for feed put in the car at home and the charge against the individual in the way of commission to defray home expenses, and the net amount due the individual. He then prepares a statement for each individual and draws a check for the amount due the individual on his shipment.

It is a very simple matter to make out the sales sheet for a shipment of cattle because each man's cattle are weighed separately at the central market. In the case of hogs this is not the case and it is necessary to prorate the shrinkage using home weights as your basis. The central market expenses are prorated on home weight, but it can be done on the central market weights just as well.

The charge for feed put in the car before the car leaves the home market is based upon the number of animals in the car. In the case of hogs the usual charge is from five to eight cents a hog depending upon the amount of corn put in the car and the number of hogs in the car. To cover the home expenses and create a small reserve fund each shipper who belongs to the association is charged three cents per hundred, upon cattle and hogs and fifteen cents a head on calves. If the shipper is not a member of the association he may ship with the association by paying five cents per hundred commission on cattle and hogs and twenty-five cents a head on calves.

The revenue raised in this way goes into the treasury of the association and pays the manager his salary, the yard man and his helpers for their labor, and the losses that occasionally occur through the loss of an animal by death enroute or the lessened value due to being crippled enroute. To charge the loss of a hog up to the car in which it was shipped would be a great hardship on the other fellows who happened to be unfortunate enough to have hogs in that car, but by our method the individual shipper does not know that there was a loss unless he happens to see the sales sheet that comes from the central market.



The Experiment Association stands for a well balanced agriculture and most of the members believe in pure bred cattle as well as pure bred grains.



Pedigree rye grows very well in the northern counties. Field on the farm of John Swartz, Langlade county.

Now, what about results? During the past year we shipped fifty-six carloads of stock as against forty-three in 1914. One hundred and fifty-five different farmers used the association during the year 1915. One individual shipped with the association during the past year, nine different times, others six times, some five times and so on down to those who tried it but once with the assurance that they would come again and that they were well pleased with the results.

It is a difficult matter to say how much money has gone into the pockets of the farmer that would not have gone there had he sold his live stock at home, but I believe I am safe in saying that from five to twenty-five cents per hundred more. I have had men tell me that they have made twenty-five dollars on a single shipment, but I believe these to be extreme cases and very rare. The shipper stands a chance of losing as well as gaining unless the manager watches market conditions quite closely. If the load of stock gets into the central market and strikes a drop of twenty-five cents per hundred, the shipper will probably wish he had sold to the local buyer.

Time does not permit me to go into the subject of preparing stock for shipment and other phases of the subject. But I find that the farmer who is using the association is watching the market closer than he ever did before and is getting to know live stock values better than he did before and you cannot offer him any old price for his stock and expect him to take it.

THE GRAIN DEALERS' CONVENTION AT PEORIA, ILLINOIS

B. D. LEITH, MADISON

The nineteenth Annual Convention of the Grain Dealers' National Association at Peoria, Illinois, on October 11-13, 1915, was a very important meeting from the standpoint of the grower or dealer in grain.

On this program were brought together several men of national prominence. Dr. J. W. T. Duvel spoke on the Standardization of Grades for Wheat and Oats. Congressman R. W. Moss, of Indiana, author of the Moss Bill on

grain standardization, explained the principles of his bill and the present status of the measure. Senator L. Y. Sherman of Illinois gave a splendid political address along lines of the grain dealers' interest. Prof. G. I. Cristie, of Purdue University, gave an address on "Corn". Prof. Livingston, of the Office of Markets and Rural Organization, U. S. Department of Agriculture, presented some of the problems of this department to the meeting. Mr. L. Duvel of the U. S. Department of Agriculture, presented an interesting paper on "Agriculture in Argentine."

With such an array of material on the program it will be impossible for me to do any more than refer to a few of the items of especial interest to grain producers.

Dr. Duvel's article dealt with the different factors concerned in grading of wheat and oats. The moisture content is a very important one. When the moisture content reaches 14 per cent there is danger of the grain becoming musty. The average moisture content of No. 2 oats at Chicago from 1911 to 1915 was 11.1 per cent. Wheat might be allowed a slightly higher moisture content for No. 2, but in no case should it go above 13 per cent. The trade terms commonly used, such as "dry", "reasonably dry", "damp", etc., allow of too much latitude. During the past season these terms were interpreted very liberally and in some cases wheat graded as No. 2 carried as high as 15 per cent moisture. He suggested the advisability of fixing the grades on the basis of quality and having each certificate show the limit of moisture for the lot of grain in question. Corn is often bought on this basis now and wheat and oats will likely be purchased on that basis in the near future. While the differences in per cent of moisture between the suggested grades are small, yet the moisture is a definite and valuable index of quality.

The dockage system of spring wheat has some advantage in that the producer knows the quantity of dirt and weed seeds in his grain and he can remove it himself if he thinks profitable. This plan will also tend to do away with the practice of adulterating grain with screenings.

Small mixtures with other grains in these market classes offer little difficulty. A small allowance is made for such mixtures, such as might come under ordinary handling on the farm or in the elevator. Just what allowance should

be made in each case for foreign grains is not easy to determine. They should at least be so determined as to discourage mixing.

The difficulties resulting from mixing different kinds of wheat were discussed. Some No. 1 durum samples have been carrying as high as 10 per cent and 15 per cent of common spring wheat. Wheat badly mixed with other kinds should be classed as mixed wheat. The difficulty that presents itself is whether a stated amount of mixture of other wheat should be permitted to allow it in a certain grade. If a certain amount of cheaper wheat is allowable, it will always be found.

The cost of treatment of smut was then discussed. Of the crop of 1914 wheat of the Pacific Northwest, as judged from 1000 representative samples, 42.8 per cent was damaged sufficiently by smut to cause a loss of \$500,000 on the crop.

While the Department of Agriculture has been making an exhaustive study preparatory to fixing the standards on wheat and oats, it seems unwise to do so until the enactment of suitable legislation providing authority to effectively supervise the application of such standards.

The "Moss Bill" as outlined by its author can be divided into three parts: the preparation and publication of uniform standards of quality and condition of grain by the United States Government; the coördination of all existing systems for grain inspection with the newly created Federal system; and the establishment of a general supervision by the Federal Government over all grain moving in interstate and foreign commerce for the detection and publication of all fraudulent practices.

Under this bill the Secretary of Agriculture would be directed and authorized to investigate the handling, grading and transportation of grain and to fix and establish the grades for corn, wheat, rye, barley, oats, flaxseed, and other such grains that may seem advisable.

Under this bill there needs to be no duplication of inspection by state and U. S. officials. There is no reason why the state inspector cannot be selected from the list of eligibles for government inspector, thus his inspection would serve for state and federal government as well.

As a great deal of the grain handled is interstate traffic, it becomes a problem to secure uniformity when each state

makes its own rulings regarding grain inspection. This bill vests the power of supervision of such shipments in the national government. Disputes regarding conformation to standards may be referred to the Secretary of Agriculture.

Grains sold by grade and not by sample are all that are affected by this bill. While there is still much to be desired regarding legislation on matters pertaining to grain trading, this bill is a step in the right direction.

Professor Christie emphasized the need of constant selection in corn. He drove home the point by showing that while it cost approximately \$13 per acre to grow corn, it is the corn that yields 70 or 80 bushels per acre which is giving a margin far above the cost of production, and the man who is growing corn that yields 20 bushels per acre is paying for the fun of growing it.

Professor Livingston in explaining the functions of the Office of Markets and Rural Organization presented several misconceptions that had arisen between the producer and dealer in grain.

The problems of the grain trade, according to his statements, are:

1. The cost of handling grain through the country elevator.
2. Too many elevators.
3. Contracting for grains with farmers and storing them.
4. Weight and scale testing.
5. Interpretation of price quotations.

He states the objects of the department to be "acquiring and diffusing among the people of the United States useful information on marketing and distribution of grain, seed and hay, and thus bringing about a better understanding between the people who produce, distribute and consume these products and to assist them to solve the problems they encounter."

ALFALFA SESSION

**Given Under Auspices of Alfalfa Order of the
Experiment Association**

PRESIDENT'S ADDRESS

ALFALFA IN REVIEW

JAMES B. CHEESMAN, Racine

Today we reassemble to pass on the work of another year. Much work has been projected, a good deal has been accomplished and much more remains to be done. Alfalfa is a most generous plant, it has promised much, it has done more than it has promised. It is a splendid servant. Its exceptional character has fitted it for a place on most farms worthy of such a name and on many farms not worthy of the name. It has taught lessons of forethought, thrift, industry and loyalty unknown to any other farm plant. It is also a forceful master. It will not dwell in an uncongenial environment. It insists on a soil deep enough to accommodate its root system for at least three or four years, and one without excess of water, free from acidity, and having at least a small amount of inoculation if the plant is to earn money in a reasonable length of time. We are not here to talk over failures, although our secretary's report may say something on that phase of the work. When a man fails we know that he has missed his mark in alfalfa culture.

During the year we have had many opportunities of seeing alfalfa growing and harvesting in various parts of the state and also in other states. Every year sees some new practice in soil treatment and seeding, for the double purpose of making available a larger proportion of soil surface and also for obtaining the most favorable seed bed for germination and a vigorous stand.

The unusual economic condition caused by the European war has created a situation inviting and fascinating to every stockman throughout the world. Speculation as to Europe's agricultural needs is quite unnecessary, and one does not

need to be a prophet to know that Europe has, and will have, much greater agricultural needs as the years roll by. What demand those wants may make on the United States will be very much of a banker's problem before they can reach the American farmer. The question of finance and the credit involved are stupendous in their magnitude and most far-reaching in their import. Think of the awful destruction of meat and dairy animals, of the lessened output of meat and milk. Pause for one moment and ask yourself who can supply the field tools destroyed. The enormous demand that will arise for farm tractors and modern implements of every type, style and capacity. In our own country where labor conditions are seldom less than strenuous the emergency is always a present status and the transition period is our normal state of existence. Alfalfa growers of eight to fifteen years' experience are finding an annual stock-taking of their practice a most needful precaution to their expansion and success with this plant. It is quite certain that the man who has been caring for ten to twenty acres finds he must adapt his practice to larger areas by remodeling and readjustment of working methods. The tools used on small fields are out of place and quite insufficient when you are dealing with sixty to one hundred acre areas. The man who grows large areas of alfalfa must early learn to be open-minded and flexible enough to think radically and change quickly when change is needed. The place which alfalfa will have in the stock industry raises the question of the feeder's ability to learn the needs of animal nutrition. The men who have profited most from alfalfa feeding on old settled farms have been careful students of feeding economics. Before any one may pose as a breeder of live stock he must be a successful feeder. In dealing with alfalfa in the cured condition we must first of all ask what is our purpose and what our sources of food supply and the end to be sought. Remember that all breeders of animals have usually been good feeders. According to the latest information our annual increase of live stock is not quite as rosy as it might be and it remains to be seen whether we can do very much in the export business after the close of the war. If we cannot all find enough pure bred animals then we may do the next best thing and use good grades. First of all we must learn to feed well before we can mold and fashion animals to

conform to the type and style embodied in the best models. It is an established fact that the effect of judicious feeding will go far to produce desirable animals for breeding and by an early use of well selected leafy alfalfa, animals' stomachs may be appreciably enlarged and their digestive capacity increased. I have in mind a Wisconsin breeder who depends mainly on alfalfa for roughage and his chief source of protein. This man's name is well-known throughout the state as one of the most successful breeders of dairy animals.

Let me here invite your attention to the most interesting piece of work of recent date in Iowa. As you know Iowa is the greatest pork producing state. Professor John M. Evaard and Russel Dunn conceived the idea that what had been so well done with self-feeders in the poultry yard and with sheep and cattle had other applications. He started out with the idea that if certain well-known feeding stuffs were placed in properly designed self-feeders swine would select on a cafeteria plan just what their physiological needs seemed to dictate and economical results followed.

Under the seductive title of: Feeding Unborn Pigs the Alfalfa Way, the experimenter placed in the proportions known to be acceptable to pigs the feeding materials. Then for check or control some groups were fed their protein in the form of meat meal, and some in the form of buttermilk. The most interesting and surprising results were the effect of protein feeding on the numbers, size and quality of the litters. This experiment goes to show that the number of pigs from sows fed rationally was almost double as compared with exclusive corn fed sows. Then the cost of feed per day was highest on corn and lowest on alfalfa, while the quality of the litters was much the lowest on exclusive corn feeding and highest on alfalfa.

Let us prepare ourselves for better husbandry. Surely there is no excuse for waste. We ought to test by weight and measure the quality and net value of all we produce and hold ourselves accountable for the best available and the highest quality of farm work. In alfalfa we have the most profitable farm plant. All we need to do is to adjust ourselves to its needs by learning all that we may, and by assisting in every way practicable the work of our Order in the agronomy department in this city and the field work conducted throughout the state of Wisconsin.

SECRETARY'S REPORT AT FOURTH ANNUAL
MEETING OF THE ALFALFA ORDER
OF THE WISCONSIN AGRICULTURAL
EXPERIMENT ASSOCIATION

L. F. GRABER, Madison.

I am glad to report on the four years of progressive work of our state alfalfa growers' association. Mr. Cheesman, our worthy president, and Prof. Moore conceived the idea four years ago that the alfalfa industry of Wisconsin should be represented by an organization which should stand for the advancement and promotion of alfalfa growing in Wisconsin.

The work started with a small charter membership of 21. In less than three years, over 1,350 joined the ranks to assist in this organized effort to place alfalfa on the rural map of the State of Wisconsin. Our Wisconsin Alfalfa Order is somewhat different than other state alfalfa growers' associations. We are not a "Booster Association." To be sure we stand for the encouragement of more alfalfa growing in Wisconsin, but rather than induce a man to grow alfalfa without making him realize the importance of inoculation, of testing his soil for acidity, of liming sour soils, of proper preparation of the seed bed, right methods of planting, and getting the soil in proper condition—in a word, if he does not appreciate the importance of giving alfalfa a *square deal*, we would rather not have him attempt to grow alfalfa at all. He will have better luck and success with timothy and perhaps with clover. The greatest drawbacks to the extension of alfalfa growing in Wisconsin today are the failures of those who take a "chance" on getting a catch of alfalfa by seeding it most any old way without regard to the requirements of the crop. I have in mind one of many incidents that illustrates this point. In one of the richest sections of Southwestern Wisconsin a farmer seeded twenty acres of alfalfa. He limed the land, inoculated, carefully prepared the soil but seeded his alfalfa the first week in September. His alfalfa was a failure. The next year he only secured seven loads of hay from his twenty acres. Why? Because he seeded his alfalfa too late in the summer and most of it winterkilled. It should have been sown the first part of

July or August. Still the result of this failure was that the vast majority of farmers in that section have not attempted to grow alfalfa. "Why," they say, "so-and-so over there tried out twenty acres and he only got seven loads from the whole piece! Alfalfa is not adapted here. It's a Western crop." And so the unfavorable sentiment prevails as a result of one man's mistake in trying to grow this crop. Now the purpose of our Alfalfa Order is to encourage alfalfa growing in Wisconsin by preventing just such mistakes. Rather than shouting from the hilltops and tree tops—"More alfalfa growing in Wisconsin"—our motto is "Grow alfalfa and grow it right." Give it a square deal if you want it to treat you square. And when I see a man who is about to grow alfalfa for the first time and who does not believe in lime for sour soil and does not believe in inoculation, I say he had better not grow alfalfa. Members of the Alfalfa Order, if farmers understood alfalfa better, more alfalfa growing would result. It's our business to make them understand it.

ALFALFA SEED DISTRIBUTION

In lieu of this policy our association during the first three years of its existence purchased coöperatively a vast amount of alfalfa seed which was distributed among over 1500 farmers for experimentation and for the purpose of determining with what general success alfalfa was being grown in Wisconsin. Furthermore, the reports of these tests, representing the experiences of farmers in all parts of the state have afforded us a valuable fund of field information to combine with the results of our experiments on the Station Farm. Here lies the most valuable part of the work of the association.

I wish at this time to give you a brief summary of the results with the alfalfa seed disseminated in the spring of 1914, when 796 farmers were supplied with various kinds of alfalfa seed. To date 487 reports have been received. The following shows the percentages of successes and failures throughout the state on this comprehensive test.

ALFALFA SEED DISTRIBUTED SPRING OF 1914

Per cent of growers having good success.....	59%
Per cent of growers having fair success.....	22%
Total.....	81%

Per cent of growers securing poor stand.....	7%
Per cent of growers reporting failures.....	12%
Total.....	19%

Why 12 per cent failures and 7 per cent poor stands? Forty-four per cent of these failures were due, according to the reports of these farmers to a need of lime and inoculation.

Members of the Alfalfa Order, I have received many reports on alfalfa growing in Wisconsin during my secretaryship of this organization and it is the same thing every year—the two greatest factors causing failures of alfalfa growing in Wisconsin are a *lack of lime and inoculation*.

Other causes for failures in order of their importance are as follows:—

DIFFICULTIES AS REPORTED BY THOSE HAVING FAIR STANDS, POOR STANDS, AND FAILURES

1. Poorly drained flat land.
2. Nurse crop too thick, (more than 1 bu. per acre).
3. Early spring freezing and thawing; ice sheets.
4. Land of poor fertility.
5. Weeds and poor preparation of seed bed.
6. Crowded out by blue grass.
7. Drought after nurse crop was harvested.
8. Lack of snow covering.
9. Loose seed bed due to late spring plowing.
10. Late fall cutting or pasturing.

RATES OF SEEDING.—10 OR 20 LBS.—WHICH?

In addition to the work of obtaining the general experiences of alfalfa growers in Wisconsin, our members are conducting specific experiments. Not among the least of these is the test now running for two and three years, on the much disputed question of the proper rate of seeding alfalfa. In 1912 and 1913, a number of tests comparing ten and twenty lb. rates of seeding were conducted by the members. The reports received this fall of 1915 on these experiments are as follows:—



1

2

Late fall cutting lowers the vigor of the following spring growth.

(1) 22 inches high. Taken from field where third crop was cut Sept. 2, 1914.

(2) 17 inches high. Taken from field where third crop was cut Sept. 26, 1914.



Winterkilling and yield tests on Kansas, Montana, Dakota, Nebraska, Grimm and other strains of alfalfa on Experiment Station Farm. Trials with these varieties are being made on the farms of several hundred members of the alfalfa order in all parts of the state.

SUMMARY OF REPORTS BY MEMBERS OF THE ALFALFA ORDER ON TESTS WITH 10 AND 20 LB. RATES OF SEEDING.

(Reports received September, 1915.)

Questions asked members who conducted the test	Replies	Started 1912		Started 1913		Average, 1912 and 1913	
		No.	Per cent	No.	Per cent	No.	Per cent
Did weeds and Blue grass cause greater trouble with 10 lb. rate?	Yes	20	69	30	91	50	81
	No	9	31	3	9	12	19
Which alfalfa gave the best quality of hay?	No. diff.	5	19	4	13	9	16
	10 lb.			2	6	2	3
	20 lb.	22	81	25	81	47	81
Which gave the thickest and best stand?	No. diff.	4	14	2	6	6	10
	10 lb.						
	20 lb.	25	86	32	94	57	90
Which gave the best yield?	No. diff.	4	13	1	3	5	8
	10 lb.						
	20 lb.	26	87	32	97	57	92
Which is best rate of seeding on weed free, not acid, inoculated and carefully prepared soil?	No. diff.	1	4	1	3	2	3
	10 lb.	2	8	6	19	8	14
	15 lb.	9	34	12	38	21	36
	20 lb.	14	54	13	40	27	47
Which is the best rate of seeding where alfalfa is seeded for the first time on soil fairly well prepared but somewhat weedy?	10 lb.			1	3	1	2
	15 lb.	2	7	2	6	4	7
	20 lb.	22	82	29	88	51	84
	25 — 30 lbs.	3	11	1	3	4	7

The matter can be summed up by stating that the best yield and quality of hay is secured by planting 20 pounds of alfalfa seed per acre and that with the ten pound rate, the weeds and blue grass cause serious difficulty.

These results coincide very closely with the reports on the same experiments received in 1913 and 1914, which were published in the second and third annual reports, experimental evidence gathered on the Station Farm and with the reports received in 1913 and 1914 on these same tests. Naturally the farmer would prefer a lighter rate of seeding such as 10 lbs. per acre if good results could be secured because it would lower his cost of seeding quite materially. In spite of this the farmer's verdict is in favor of 20 pounds per acre, especially where alfalfa is seeded for the first time. The time may come when our lands will become so well adapted to alfalfa growing that 10 or 12 pounds per acre will be sufficient, but obviously this time has not yet arrived in most sections of the state.

SOUTHWESTERN OR NORTHERN GROWN SEED—WHICH?

Just what effect the kind of seed has on the winterkilling of alfalfa stands is an exceedingly important problem which is now being worked out by the members of the Alfalfa Order. Southwestern grown alfalfa seed has generally been considered less hardy than that produced in the more northern states where winters are more rigorous. While sufficient work has not been carried on to definitely determine this matter, reports and experiments conducted so far seem to indicate that Kansas and Nebraska and other southern seeds may be adapted to our conditions. Excellent seed can be secured from the southwest and in dry years when there is a big crop it sells for from two to four dollars less than the northern grown strains. If southwestern grown seeds are hardy here in Wisconsin, it is of great importance that our alfalfa growers should know it. In view of this, a year ago two pounds of Oklahoma grown seed were sent to a number of the members, for growing and comparison with northern grown alfalfa seed. Thirty-eight reports on this test which has now been running two years,* are summarized as follows:

REPORTS ON SOUTHWESTERN GROWN ALFALFA SEED PLANTED SPRING OF 1913, BY MEMBERS OF THE ALFALFA ORDER IN COMPARISON WITH NORTHERN STRAINS. (REPORTS RECEIVED FALL OF 1915.)

Questions	Answers	Numbers	Per cent
Has southwestern alfalfa seed winterkilled?.....	Slightly	1	3
	Yes	7	19
	No	29	78
Has northern grown alfalfa along beside it winterkilled?	Slightly	3	8
	Yes	4	11
	No	30	81
Which gave the best stand and yield?	No difficulty	24	70
	Southwestern better	5	15
	Northern better	5	15
From your experience with this test what do you think of southwestern grown alfalfa seed for your vicinity?	O. K.	20	72
	Superior	2	7
	Slightly inferior	4	14
	Noticeably inferior	2	7

* See third annual report for first year's results of this test.

In analyzing this data it is clear that for the second year there was little difference in the winterkilling of the southwestern and northern grown alfalfa seed. At least it can be said that the southwestern grown alfalfa has proven itself practically as hardy and productive as the seed from more northern states.

TESTS BEGAN SPRING OF 1914 ON KANSAS, NEBRASKA, DAKOTA,
MONTANA AND GRIMM ALFALFA SEED

A more comprehensive state wide test was begun in 1914, when approximately 116 members were supplied with Nebraska grown seed, 96 with Kansas, 111 with Dakota and 10 with Grimm alfalfa seed for comparison with two kinds of Montana grown seed.

There was little difference in the growth and stand of the two kinds of Montana Alfalfa seed No. 1 and No. 2. No. 1 seed came from a very old field in Montana and No. 2 from newer fields. Of the 453 reports, 99 per cent could see no difference and about 1 per cent declared that No. 1 produced a little better than No. 2.

DAKOTA ALFALFA SEED O. K. FOR WISCONSIN

Those trying Dakota seed found it to be very satisfactory in this first year's trial. Out of 49 reports received to date, 82 per cent declared it equal to and in every way as good as Montana and 9 per cent thought it was better than Montana and 9 per cent thought the Montana better than the Dakota.

KANSAS AND NEBRASKA SEED GIVE GOOD RESULTS WITH
FIRST YEAR'S TRIAL

Seventy-two reports from members trying out Kansas and Nebraska alfalfa seed indicate that at least for one winter the Kansas and Nebraska alfalfa seeds have proven to be as hardy and productive as the northern grown alfalfa seed. Sixty-three per cent of these reports declare that the Kansas and Nebraska alfalfa seed are equal to Montana and Dakota seed; 14 per cent thought Kansas and Nebraska seed better than Montana and Dakota seed, while 23 per cent felt that these seeds were inferior to Montana and Dakota grown strains.

One hundred and seventy-six of the members who were not conducting this test gave their opinions and experience as to the value of Kansas and Nebraska alfalfa seed for Wisconsin conditions.

Of these 80 per cent reported favorably while only 20 per cent felt Kansas and Nebraska alfalfa seed were not as hardy as the Montana grown strains.

It would seem that the results of these tests indicate that on the whole, Kansas and Nebraska grown alfalfa seed will prove to be adapted to Wisconsin conditions.

In conclusion let me invite those of you who have not already done so to join our organization. The membership fee is only 25 cents. We furnish our members with litmus paper for testing soils and keep you informed in our reports and bulletins as to latest facts on growing alfalfa—how to get good stands and how to prevent failures. Let us have your coöperation to keep up this work and gain all the information necessary to place the alfalfa industry of Wisconsin on a firm and lasting basis.

ALFALFA GROWING IN SOUTH DAKOTA

A. C. JOHNSON, GEN. TRAFFIC MANAGER,
CHICAGO & NORTHWESTERN RY.
Chicago, Ill.

Contrary to popular belief, Alfalfa really is of such ancient origin as to give it precedence, in continuity of production, as a domestic forage plant. An unbroken line of production from such remote period of several centuries, covering such wide and different conditions with such slight difference in kind and quality with wide range of conditions, places it in a distinct class by itself, not only in the legume family, but in comparison with all other farm production of either plants or cereals.

Alfalfa originated in Asia and was carried by the Persians into Greece during the fiftieth century B. C. It was in Italy the first century A. D., and was in Spain during the eighth century A. D. and taken by Spaniards to Mexico and South America in the sixteenth century, being introduced in England about 1560, and thence throughout Europe and

South America generally. Thus it had grown continuously in all foreign countries many centuries before it was introduced in the United States. It has a well-established record of about 2400 years from its first recorded existence to the present time.

It was brought from England to New England shores about the year 1600, but it was not successfully produced, and the continuous history of Alfalfa in the United States dates back only 62 years, though it is possible it has a longer period of production of which there is no record. It was brought from Chili to California during the year 1854, or 62 years ago, and was carried by Mormons from lower California to Utah and was there produced in the Salt Lake Valley. It was brought from Germany to Minnesota in the year 1857, or 59 years ago, and it was from these two original lots that much of the early seed was secured, although many importations have been made during late years.

In foreign country production it had its varied progress in periods, covering such a wide range in years that it proves conclusively the fact that its progress was not rapid in the aggregate. In the United States its progress was prior to a dozen years ago in certain periods and certain localities, and while being produced in localities for more than half a century in the United States, in other than irrigated sections, it was not considered a staple crop, generally, until within the past very few years.

There was obstruction to certain progress of Alfalfa, which we will briefly recite. First; Its real value and uses were not fully known. Second; It was considered an irrigated plant only; and third, and most in importance, was the failure to thrive on account of improper methods of cultivation. The first two we will pass briefly, as the value and use of alfalfa have been generally determined and are now understood; but while it is conceded to be a valuable irrigation crop, it is also an established nonirrigated crop. We think the greatest barrier to progress in the past has been the improper method employed in cultivation and production.

We have visited Alfalfa fields in many states and localities in the United States. Its growth is increasing rapidly in California, New York, Montana, Louisiana and in every latitude and climate in the United States, as it is in Siberia,

Germany, France, Italy and Cuba; so that Alfalfa is not only a national but an international production of comparative known value, (not to the exclusion of other farm forage crops, but in connection therewith,) it is possible that its popularity may be a further menace to its successful production, by a disregard of proper method, selection and care. The real problem, as we view it, is method in production.

We have some knowledge of the work and progress of Alfalfa production in the state of Wisconsin. No state or locality has a greater opportunity. With its large acreage yet uncultivated, it is our prediction that the production of Alfalfa, by modern methods, will be an agency that will add more wealth to the state in crop production value, soil fertility, attendant other production, and last but not least the value of farm acres in the next ten years than has been done during the past thirty years, which net results will accrue to the average present generation.

PRODUCTION IN STATES

California undoubtedly produced the first Alfalfa in the United States, but some other western states were early producers. Minnesota began production in 1857, in Carver County. The early plantings were successful and the seed in such localities has proved very valuable. The fact that it has had long and continuous climatization in same location has made it valuable, not only in such locality but also in other localities where climatic conditions are similar. The history of Grimm's Alfalfa, produced in Carver County, Minnesota, first, and continuously to date, is given as follows:

"In that year (1857) there came to this country from the little village of Kulsheim, near Wertheim, in the Grand Duchy of Baden, a German farmer named Wendelin Grimm. Like many of his countrymen Grimm went West, taking up a farm in Carver County, Minnesota.

"Among the few possessions that he brought from his old home with him was a small bag containing less than twenty pounds of seed of the Alfalfa, or lucerne, commonly cultivated in Baden. Grimm applied numerous local names to this Alfalfa, but most commonly he called it 'ewiger Klee' (everlasting clover) referring to its permanent nature.

"This small lot of seed was the progenitor of an Alfalfa industry that has existed in Carver County, Minnesota, for more than a generation and which is now being extended into other parts of the northwest."

This gives briefly the origin of the hardy alfalfa which is now well and favorably known under the name of the Grimm Alfalfa.

Captain Seth Bullock of Deadwood fame, an intimate personal friend of Ex-President Roosevelt, from early frontier days, and whose friendship we are proud to possess, was the first Alfalfa producer in South Dakota, and the original field sown in 1881 has today an excellent stand, after a period of 35 years' growth. The farm has been continuously owned and operated by Captain Bullock from 1879 to date. During the 70's Captain Bullock was a guard of shipments of gold to Denver. He saw the plant growing in Utah and secured his seed from that source and sowed it at Belle Fourche in 1881.

The Belle Fourche field sowed by Captain Bullock is the first production in South Dakota of which there is authoritative record, and it has been our privilege to see this and other crops in that vicinity. This seed spread slowly, as there were few ranchmen to adopt it. The very abundant wild grasses were sufficient for necessities, but gradually some ranchman would sow some Alfalfa and it is from this original stock that most of the seed has been produced and shipped. During the year 1914 there was shipped, I think, 65 carloads of seed from South Dakota. Last year was an exceedingly bad year for seed maturity.

NECESSARY REQUIREMENTS

Few if any farms are physically adapted in their entirety to the successful production of Alfalfa, and yet practically every farm has sufficient acreage, if selected, to produce a required amount. The tendency is, when poor selection is made and failure is a direct result, to retire from further effort with the conviction that the locality is not adapted to its cultivation, and in other cases, where favorable results are secured by accidental selection, to greatly increase the acreage and include acreage physically unsuited for the purpose—all of which makes prominent the importance of selection of land and seed, with due regard to all other essentials; as one acre will suffice for a test, while 100 acres might be a problem.

. Successful production of Alfalfa requires one fast rule: More efficient work to increase the average standard of production and quality, keeping step with progress and business demands, preventing possible discouragement caused by misdirected effort, and removing the production of alfalfa from the experimental stage in the shortest possible time. Such procedure requires engineering ability in the selection of land, knowledge of soils and especially of seeds, and other requirements usually possessed by the average farmer. When the essentials are known and understood, we think, one of the most important matters is the question of climate and its relation to effect on seed.

Mild climate seeds will germinate in a more severe climate but do not stand the necessary after tests. Climatization of seeds is a pronounced necessity. The permanency of an Alfalfa crop is a large element in its value. The severe test of permanency, other conditions being favorable, lies in the winter-resisting power of the plant, made possible by acclimation of seed. Theorists inform us there is no complete remedy against winterkilling, on account of there being no seed yet sufficiently climatized to wholly resist it. We agree with such theory, but the seed that has been longest produced under certain conditions will produce the highest per cent of good results under similar conditions. If seed can be secured in a locality where it is to be seeded and it has been successfully produced in such locality for a period of time, it is the most desirable seed to use, the length of time it has been produced in such locality adding value to it as a seed for such locality.

Standard production and longevity of crop are most desirable, and such combination of requirements might well and does represent a test. It is pleasing to note that progress is being made in both, as a standard production practically assures longevity. I trust you will pardon me if I speak briefly of Alfalfa production in the state where we have made our most careful observations and where the greatest possible amount of progress has been made, and the direct effect on the entire state. Alfalfa is now being produced in South Dakota with equal success on land with a value of \$20.00 per acre and land valued at \$150.00 per acre. This condition can be duplicated in Wisconsin today.

South Dakota ten years ago produced only a few acres of Alfalfa, and yet in certain sections of the state it has been successfully produced continuously in the same fields for 25 years, insuring profit and longevity of crop. During the season of 1915 there was 199,918 acres engaged in Alfalfa production. This same acreage should have produced twice as many tons as were produced. However, this is a wide range in individual production and a state average. For instance, the State of Illinois, is the largest corn producing state, and while there are individual productions in Illinois of over 100 bushels per acre, the average for the entire state was 36 bushels per acre. In South Dakota we know of nonirrigated land, one field in particular, with Alfalfa 12 years of age that produced a little over 8 tons per acre in the four cuttings in 1915, which was an unusually favorable season for Alfalfa feed, but not for seed.

South Dakota produced 31,000 bushels of Alfalfa seed in 1915, and it is the largest Alfalfa *seed shipping* state in the Union. We know the acreage has more than trebled in five years, will be doubled in 1916, and with additional experience and better methods, will be one of the greatest Alfalfa producing states, with all the attendant productions that will add so materially to its wealth. This condition, so far as possibilities are concerned, is representative of South Dakota, North Dakota, Minnesota, Wyoming, Iowa, Illinois, Michigan, Nebraska, and Wisconsin. It is now a question of rapid progress stimulated by the greatest average success.

In the sale of seed there is wide opportunity for fraud. This, added to much ignorance on the part of some dealers in seed, leads almost direct to failure for the planter. A purchaser in Northern Wisconsin knows he does not want a seed produced too far South and yet he does not have the means of knowing, except on statement of dealer, who, in turn, possibly does not know. The Turkestan Alfalfa comes from a wide range of country and various climatic conditions, and represents as wide a variation as Arizona and Minnesota seeds; so that variety alone does not determine what is equally or more important, the climatic and hardy variety of any kind of seed. The protection is to secure seed from a similar locality, or better, produce your own seed.

Other gentlemen present will address you on technical matter connected with this subject. Our views do not carry other than matter of which there must be but common interest, but such common interest is growing and spreading, as it has opportunity to do and will continue to do, until there will not be a farm in the United States without an Alfalfa crop. That is something which can not be said of any other one farm product. We repeat, it is not only a national but an international production, and statisticians will have a wide field in compilation of material for actual and prospective results.

MUTUAL RELATION OF FARMING AND TRANSPORTATION.

We have in our crude manner outlined the effect of intensive cultivation of a crop that is not only a ready money-maker through agencies that upbuild the business plant or farm employed in operation, makes the farm more valuable, the owner more useful and independent. Our view is that, more than any other farm factor, Alfalfa successfully produced lays the foundation for all other successful farm efforts. A location or district thus established directly concerns and insures due consideration by a transportation company.

Land that is idle for any reason is practically worthless. If profitably employed it is brought into the production class. If it can be made more productive by a crop that in turn supplies direct, and through agencies, fertility that again adds to volume, it will in an accumulative effect produce an excess, and such excess in volume produces transportation. A common carrier is dependent entirely upon volume of traffic, and volume is one of the most important and prominent factors in rate construction. Thus, the prosperity of the farmer adds to the prosperity of the Transportation Company.

Excess volume is the factor that supports transportation. If there is no excess and a reverse condition exists, there is no supply to draw from and the demand becomes lessened by restriction and economy, and thus while supply and demand conditions adjust themselves, the transportation company is deprived of volume and consequently feels the result of depressed conditions most keenly. We think an

excess will create and find a demand, and in many ways stimulate transportation. A decrease or short supply, will, to an extent, adjust itself by economy measures. Thus we differentiate between excess supply and demand in its effect on transportation.

Transportation lines are most prosperous in localities where density of business prevails, both on account of volume and on account of average and regularity of movement. A farming community that is dependent on only certain crops, has, as a rule, a short congested period of transportation movement, with a longer period of forced depression. Such crops as a rule are independent and have little if any effect on other productions, but our particular crop subject is not only the basing factor for intensive production but the supporting factor for other prosperity.

The possibilities of the large uncultivated acreage now designated as cheap lands, coming into the cultivated class with such valuable production per acre in comparison with yields on high class acre farms, is sure to produce a strong support for transportation lines that are not now being supported, and also in many cases where the traffic is being rapidly depleted. It is our view that the stimulus now being accorded the production of Alfalfa is timely from a transportation viewpoint.

The conditions, we think, establish a reasonable mutual relation between a farming community and transportation company, and we know of no factor so essential to prosperity for both, as volume and value. We believe the production subject under discussion the most essential one, in order to maintain such relation purely on business consideration, but business efficiency methods must be injected in farming operations. Theory and practice combined will produce the highest per cent of mutual prosperity, in which both farming and transportation interests will mutually share.

This is not a building-up process alone for future generations, but the present generation will benefit. It will provide safeguards for the future that were not given to us by our forefathers in the same manner. It was not necessary at that time, as our heritage was in the large amount of uncultivated acres which were left us. Our legacy will be a largely increased fertility and productive value, and future genera-

tions and transportation lines will always be mutually interested.

We have, during our past years enjoyed special advantages, having been employed by a transportation company so closely related to agriculture, many of whose officers passed their early life on a farm, with a President fully in sympathy with farm life and whose long railroad experience in Wisconsin especially qualifies him with knowledge of local conditions, which gives us the privilege of being present here today. We have personally for many years been interested, not in speculative farm lands or tenant farming, but in actual farm operation, and for past 14 years have modestly produced alfalfa, with success and satisfaction.

HOW TO GROW ALFALFA

L. F. GRABER, SECRETARY ALFALFA ORDER, Madison, Wis.

Some have tried alfalfa and failed. Many have succeeded and are reaping the benefits of this wonderful crop for live stock farms. As a hay crop it excels all others in yields, feeding value, drought resistance and soil enrichment. Yet it has its drawbacks and it is not always easy to get a good stand. It is a rather particular crop, requiring certain soil conditions and proper treatment. The beginner in alfalfa growing must first of all be a student of alfalfa. He must study the crop and learn its requirements. If he is not willing to pay attention to such important details as inoculation, liming, proper seeding methods, cutting at the proper stage and others to be mentioned, he had better not try to grow alfalfa. Start in a small way with 3 to 5 acres and grow up with the business.

Where to plant alfalfa.

Choose a well drained field having preferably a gentle slope so as to prevent an accumulation of water from melting snow or heavy spring rains.

Poor land should always be well manured. A medium clay loam is best. On heavy clays winterkilling is more apt to occur. Light sandy soils generally require lime and

manure. Alfalfa does well on river bottom lands but peat soils are too sour or acid.

It is best to have alfalfa follow some well cultivated crop like corn, potatoes, tobacco or sugar beets where the soil is freed of weed growth. Never put alfalfa on sod land for the blue grass will cause difficulty. A virgin soil should always be first subdued by growing several cultivated crops to get the soil in good physical condition.

Don't fail to inoculate.

It very often spells success, where otherwise failure would result. It is easy to do and decidedly important. You can't afford to take a chance on trying to grow alfalfa without having the soil properly inoculated.

Spread a ton of soil taken from a successful alfalfa field or from the roadside where sweet clover is growing, on each acre of the land you are to seed to alfalfa. Do this just before sowing the alfalfa seed, and harrow it in. Then you have introduced the proper alfalfa bacteria in the soil which are so essential in securing a healthy, vigorous growing alfalfa crop. And, remember, a field once properly inoculated is always inoculated.

All farmers are advised to mix a quart of alfalfa seed per acre with the timothy and clover seed when seeding down, as this will get a few alfalfa plants established in the field which will become bacteria distributors and thus inoculate the soil for future crops of alfalfa.

A fair inoculation can be obtained by securing some alfalfa soil direct from the Experiment Station or from some good alfalfa field, and then mix equal parts of soil and alfalfa seed by weight. Sow the soil and seed mixture by hand. For limited areas of one or two acres, this method of inoculation is practical.

Shall we lime the land?

Alfalfa will not do well on sour or acid soil. Before growing alfalfa, the soil should be tested with blue litmus paper which can be secured from a druggist. Take a handful of moistened earth from a few inches beneath the surface of the ground and press into a ball. Break this mud ball into halves and place a strip of blue litmus on one of the

halves and cover with the other. After five minutes examine the litmus paper, and if it has changed in color, from blue to a distinct pink or becomes spotted with pink spots, the soil is acid and needs lime for successful alfalfa growing.

On sour soils from two to four tons of air-slaked lime or ground limestone rock or marl or lime refuse should be applied. Whatever form is used it should always be applied to the surface of plowed land and harrowed or disked in. It may be put on in the fall or early spring—prior to seeding the alfalfa. Lime distributors are desirable when large areas are limed but with small acreages it can be conveniently spread with a shovel or a manure spreader.

The best method of seeding.

For the beginner seeding the alfalfa alone gives the best results. The soil is plowed in the fall or early spring and limed if necessary. Then the field is disked and harrowed often enough up to the first of June or July to clean the land of weeds. On average fields this weed killing process need not be continued later than the first week in June, but with a weedy soil it is well to harrow and disk until July or August. The field is then inoculated and the alfalfa seeded at not less than 20 pounds per acre. With a favorable season, one crop or two crops of hay are sometimes secured before September 1, but this is entirely dependent on the rainfall and our soil conditions.

Seeding with a nurse crop.

Especially on fields which have grown alfalfa successfully seeding with a nurse crop gives good results. Fall plow, if the land is not too hilly and washing is apt to occur. If spring plowed, the soil should be rolled after seeding so as to make a compact seed bed which is very essential for the alfalfa. A light harrowing after rolling is necessary to form a loose mulch which prevents rapid drying and evaporation. A light seeding of not over one bushel of barley or oats per acre is highly important. Heavy seedings of the nurse crop are very dangerous and usually crowd the alfalfa so as to stunt its development and a poor stand results. If barley is used as a nurse crop, it



1 2 3 4
Effect of late summer seeding on the vigor and rapidity of growth the following spring.

Date seeded 1914	Length of roots May 12, 1915	Length of stems May 12, 1915
(1) Aug. 4, 1914	20 inches	20 inches
(2) Aug. 25, 1914	13 inches	17 inches
(3) Sept. 15, 1914	10 inches	13 inches
(4) Sept. 26, 1914	8 inches	8 inches



A Wisconsin farm scene made of seeds, mosses and grasses by C. J. Berg, Tigerton. The beautiful picture was shown in the Wisconsin Agricultural Exhibit at the Panama-Pacific Exposition.

may be cut for grain. Oats ripen later and must be cut for hay so as not to check the growth of the alfalfa.

Other methods.

Where a crop of early potatoes has been grown the alfalfa may be seeded after their harvest but not later than August 15. Seeding alfalfa after this date nearly always results in failure as the crop does not get sufficient growth before the first killing frost to withstand the winter. In those sections where canning peas are grown and harvested in June or the first part of July the soil may be disked and harrowed and inoculated immediately the peas are harvested and the alfalfa seeded at the rate of 20 pounds per acre with good results. Seeding alfalfa after a grain crop has been cut is dependent for success on the amount of rainfall. Too often the soil is so dry at this time that it is impossible to work up a good seed bed prior to August 7th.

Where a crop of tobacco or sugar beets has been raised and the land practically freed of weeds the alfalfa may be seeded alone in the early spring and two, sometimes three, good cuttings are secured the first year.

When should alfalfa be cut?

To maintain a good stand of alfalfa nothing is so important as to cut the crop at the proper time. The first cutting will come in the early part of June—a trying time to cure the hay. The proper cutting stage is when the plants have just begun to bloom and the little shoots or sprouts at the crowns have made their appearance and are on the average not over an inch in length. To delay the cutting of alfalfa until the entire field is in blossom is a very poor practice. At this stage the little shoots or sprouts at the base of the stem which produce the second crop will have grown three to five inches in length. In mowing these will be clipped off and the second growth delayed two or three weeks. The third cutting will then not be ready until the middle or latter part of September. If the third crop is harvested at this time the alfalfa seldom secures sufficient growth before cold weather to withstand the winter. Many failures are due to late fall cutting. Alfalfa should never be cut after September 5.

Curing alfalfa hay.

The best hay is made by cocking the alfalfa and covering it with hay caps, which insures protection against rains. The hay is bunched usually on the same day it is cut when in a good wilted condition. By allowing it to cure in this manner for two days, the leaves and stems dry out uniformly, with little loss and you get a bright green hay of the best quality.

When alfalfa hay is harvested on a large scale, or if labor is scarce, hay caps are not always used. After the hay is well wilted, it is raked into long windrows with a side-delivery rake and allowed to cure here for two days. It may be loaded with a drum hay loader or hauled in with sweep rakes. Alfalfa hay will stand more rain than either timothy or clover.

Why alfalfa fails.

During the past three years over one thousand reports on alfalfa growing in Wisconsin have been received by the Alfalfa Order—Wisconsin's Alfalfa Growers' Association. These reports clearly show that the principal causes for failures with alfalfa in Wisconsin are as follows:

1. Failure on part of farmers to inoculate the soil.
2. Attempting to grow alfalfa on sour or acid soils without liming the land.
3. Poor preparation of the seed bed and improper methods of seeding.
4. Weeds—heavy growths of which crowd out the alfalfa.
5. Too thick seeding of the nurse crop. Not over one bushel of grain should be sown with the alfalfa and if oats is used it should be cut for hay.
6. Late seeding. Seeding after August 15 is a dangerous practice. Sufficient growth is often not secured before cold weather sets in so that the alfalfa may stand the winter.
7. Late cutting. Cutting alfalfa after the first week in September has resulted in serious winterkilling of many otherwise good stands of alfalfa. Alfalfa should have at least six to eight inches growth to afford sufficient winter protection.

8. Pasturing. Late and close pasturing are particularly dangerous.

9. Poor soils. Although alfalfa is a great soil enricher it requires at least a medium fertile soil. Poor soils should be well manured.

10. Low, flat, poorly drained soils. Alfalfa requires a well drained field. On flat, heavy clay soils which hold water from melting snows and heavy rains in the early spring alfalfa may be heaved out by alternate freezing and thawing weather. A sloping field which will provide ample run-off for surface water is more desirable.

SOME POINTERS FOR BEGINNERS

L. F. GRABER, SECRETARY ALFALFA ORDER, Madison, Wis.

Start with a small patch—say three to five acres. Study the crop. Write for literature and bulletins on alfalfa, lime, etc. It's the man who will pay attention to such things as liming, inoculation, careful preparation of seed bed, proper seeding methods, etc., who will win out with alfalfa. The fellow who "takes a chance" with any old method is too often disappointed.

It is a good plan to sow alfalfa, where a well cultivated crop such as corn, potatoes, tobacco, sugar beets, etc., has been grown the preceding year. This is one way to get around the weed problem. Don't attempt seeding alfalfa on plowed sod as the blue grass will almost surely get control of the field the first year.

On sour soils apply lime at the rate of from two to four tons per acre to the surface of plowed land and harrow or disc it in. It should never be plowed under.

Remember that where alfalfa can be successfully grown, it excels all other hay crops in yields per acre, feeding value, as a soil enricher, and drought resister.

Remember, that according to reports of several hundred Wisconsin farmers, who are members of the Alfalfa Order, Wisconsin State Alfalfa Growers' Association, one-half of all the failures in growing alfalfa are due to a lack of lime and inoculation. You can grow good corn on sour land, you can grow good grain on sour land, but you can't grow

good alfalfa on sour soil. Lime sweetens the soil, takes the sourness or acid out of soil, and makes conditions most favorable for alfalfa.

It's hard for us to realize that our upland soils are sour—we generally think of marsh soils where sour or wild slough grass grows as the only soils that are acid—but this is not always true—very frequently cultivated upland soils are sour—too sour to grow good alfalfa without lime.

Oftentimes one load of inoculation dirt per acre is worth more than ten loads of manure in establishing a good stand of alfalfa.

START RIGHT WITH ALFALFA

One of the main purposes of the Alfalfa Order is to determine the difficulties, the advantages, and the disadvantages of alfalfa growing in Wisconsin. It is undoubtedly true that alfalfa has its place as an exceedingly important forage crop on many farms, but there are conditions where the advisability of attempting its growth is doubtful. In those sections of the state where clover grows luxuriantly and bounteous yields of this great crop can be easily and cheaply obtained, alfalfa should not be too greatly emphasized, especially if its establishment is difficult, costly, and uncertain.

MUST KNOW ALFALFA TO GROW ALFALFA

The farmer can well afford to take special care and go to reasonable expense in getting a stand of alfalfa, but he must know alfalfa before he can grow it. The beginner should try only a small patch and study the crop in reference to his local conditions. It is one of the particular objects of our association to secure the results of these trials on alfalfa and make this information available to all our members. In this way all alfalfa growers can profit by the experience of others, whether it be success or failure, and a healthy sentiment creating confidence in the possibilities of alfalfa growing in Wisconsin is brought about.

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Vice President—Nelson Guenther, So. Milwaukee,
Secretary-Treasurer—F. J. Sievers, Wauwatosa,
Asst. Sec.—H. F. Schroeder, Sta. D., Milwaukee.

MONROE COUNTY.

President—C. F. Hansen, Sparta,
Vice President—L. A. Miller, Sparta,
Secretary-Treasurer—C. E. Hitchcock, Sparta.

OCONTO COUNTY.

President—Geo. Beyer, Oconto,
Vice President—Chris Peterson, Oconto Falls,
Secretary-Treasurer—Ellen B. McDonald, Oconto.

ONEIDA COUNTY.

President—Geo. H. Dawes, Tomahawk Lake,
Vice President—Willis Jewell, Rhinelander,
Secretary-Treasurer—W. D. Juday, Rhinelander.

OZAUKEE COUNTY.

President—Wm. J. Bichler, Belgium,
Vice President—Chas. J. Nieman, Cedarburg,
Secretary-Treasurer—Richard F. Berger, Fredonia.

PIERCE COUNTY.

President—W. O. Peirce, River Falls,
Vice President—Ed. Campbell, Ellsworth,
Secretary-Treasurer—W. W. Clark, Ellsworth.

POLK COUNTY

President—Vernon A. Miller, Osceola,
Vice President—Geo. Clark, Dresser Jct.,
Secretary-Treasurer—J. S. Klinka, Balsam Lake.

PRICE COUNTY.

President—Geo. Lawton, Park Falls,
Vice President—C. A. Peterson, Prentice,
Secretary-Treasurer—Griffith Richards, Phillips.

RACINE COUNTY.

President—James B. Cheesman, Racine,
Vice President—C. C. Gittings, Racine,
Secretary-Treasurer—C. E. Fawcett, Rochester,
Asst. Secretary-Treasurer—Arthur E. Skewes, Union Grove.

RICHLAND COUNTY.

President—J. R. Thorpe, Tavera,
Vice President—H. T. Draheim, Gotham,
Secretary-Treasurer—H. L. Post, Sextonville.

ROCK COUNTY.

President—Noyes Raessler, Beloit,
Vice President—Edgar Huebbe, Beloit,
Secretary-Treasurer—J. R. Cranston, Beloit.

ST. CROIX COUNTY.

President—R. W. Brunner, Hudson,
Vice President—P. A. Paulson, Hudson,
Secretary—Wm. Schwandt, Deer Park,
Treasurer—Chas. Stiles, Hudson.

SAUK COUNTY.

President—Albert Wichern, Baraboo,
Vice President—R. J. Martiny, Baraboo,
Secretary-Treasurer—Geo. W. Davies, North Freedom.

SHAWANO COUNTY.

President—E. S. Hildeman, Belle Plaine,
Vice President—Roman Muscavitch, Shawano,
Secretary-Treasurer—Paul Ashman, Shawano, R. F. D. 3.

SHEBOYGAN COUNTY.

President—W. J. Zelm, Plymouth,
Vice President—A. Miller, Plymouth,
Secretary-Treasurer—W. G. Streiber, Elkhart Lake.

SUPERIOR ORDER.

ASHLAND, BAYFIELD AND DOUGLAS COUNTIES.

President—C. F. Bogenrief, Washburn,
1st Vice President—Roscoe Hosmer, Ashland,
2nd Vice President—E. C. Stevens, Washburn,
Secretary-Treasurer—E. J. Delwiche, Green Bay.

TAYLOR COUNTY.

President—John Gamper, Medford,
Vice President—Chas. Ditzke, Stetsonville.
Secretary-Treasurer—R. A. Kolb, Medford.

VERNON COUNTY.

President—Nels O. Neprud, Coon Valley,
Vice President—Cornelius Sebion, Westby,
Secretary-Treasurer—Walter McClurg, Viroqua.

WALWORTH COUNTY.

President—Jesse S. Harris, Delavan,
Vice President—Ross H. Ellis, Darien,
Secretary-Treasurer—Leslie Oldham, Elkhorn.

WASHBURN-BURNETT COUNTIES.

President—M. W. Cadle, Shell Lake,
Vice President—E. H. Allen, Shell Lake,
Secretary-Treasurer—Ed. Rylander, Shell Lake.

WAUKESHA COUNTY.

President—Sam L. Mann, Waukesha, R. 2,
Vice President—Wm. J. Wright, Waukesha,
Secretary-Treasurer—Dr. G. S. Love, Waukesha.

WAUSHARA COUNTY.

President—Tostie Thompson, Wautoma,
Vice President—M. O'Connor, Hancock,
Secretary-Treasurer—Supt. E. Coates, Wautoma.

WINNEBAGO COUNTY.

President—A. J. Cross, Allenville,
Vice President—E. Race, Omro,
Secretary-Treasurer—

WOOD COUNTY.

President—A. P. Bean, Vesper, R. F. D. 1,
Vice President—J. F. Schmidt, Arpin, R. F. D. 2,
Secretary-Treasurer—W. W. Clark, Ellsworth.

PROGRESS OF THE MARINETTE COUNTY ORDER.

D. S. BULLOCK, SECRETARY, Marinette

The Marinette County Order has just closed its third year's work and has every reason to be pleased with what has been accomplished. Last spring the members sold about eight hundred (800) bushels of seed corn, shipping it to five different states. As far as I have been able to ascertain, every member sold all of the pure bred grain they offered for sale.

Last fall the Order put on the first County Exhibit ever shown from Marinette County, as a County, at the State Fair.

In connection with our annual meeting on Jan. 8 was held the first Annual Corn and Grain Show. In order to make

this a permanent annual event, seven beautiful sterling silver cups have been obtained to be competed for by the members. To become the permanent possession of any person these trophies must be won three years. These cups were very generously donated by local business firms and loyal citizens.

Plans are already under way for an exhibit at the 1916 State Fair. We are also planning a campaign for the more extensive growing of Soy Beans for seed and also for the introduction of pedigree strains of field peas.

Our membership at present is 262.

CONSTITUTION AND BY-LAWS OF THE COUNTY ORDERS OF THE WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION

ARTICLE I.—*Name.* The organization shall be known as the.....
.....County Order of the Wisconsin Agricultural Experiment Association.

ARTICLE II.—*Object.* The object of this organization shall be to promote the agricultural interests of the County and State in general.

1st. By coöperating with the Wisconsin Agricultural Experiment Association in growing and disseminating pure bred seed grains.

2nd. By having Associations' exhibits at agricultural fairs.

3rd. By having annual meetings in order to report and discuss topics beneficial to the members of the Order.

ARTICLE III.—*Membership.* 1. Any person may become a member of this Order who has taken a course in the College of Agriculture at Madison or at any place in the State under the jurisdiction of the College.

2. Any one who is interested in pure bred grains and live stock or in progressive farming in general may become a member of this Order.

3. Honorary membership may be conferred upon anyone interested in progressive agriculture by a majority vote at any annual or special meeting.

ARTICLE IV.—*Dues.* A fee of fifty cents shall be collected from each member annually.

ARTICLE V.—*Officers.* The officers of this Order shall consist of a President, Vice President and Secretary-Treasurer, whose terms of office shall be one year, or until their successors are elected.

ARTICLE VI.—*Duties of Officers.* 1. It shall be the duty of the president to preside at all meetings of the Order and to enforce the observance of such rules and regulations as will be for the best interest of the organization; to appoint all regular committees as he may deem expedient for the welfare of the Order.

2. In the absence of the President, the Vice President shall preside and perform the duties of the President.

3. The Secretary-Treasurer shall keep the records of all meetings and proceedings of the Order, also the names of all members and their addresses. He shall also keep the funds of the Order, collect all fees, pay all debts, and shall submit a written statement of all moneys received and paid out by him and shall balance his books not later than one month before the annual meeting.

ARTICLE VII.—*Disbursements.* The funds of the Order shall be used to defray its expenses or by vote of the Order for such purposes as will

advance the agricultural interests of the Order and shall be paid out only upon an order signed by the President and countersigned by the Secretary.

ARTICLE VIII.—*Amendments.* This constitution may be amended at any meeting, by a two-thirds vote of the members of the Order present.

BY-LAWS

ARTICLE I. The officers of this Order shall be elected by ballot at the annual meeting.

ARTICLE II. This Order shall be governed by Roberts' Rules of Order.

ARTICLE III. All members joining at the organization of this Order shall be known as Charter Members.

ARTICLE IV. The time and place of holding the annual meeting shall be determined by the officers.

Adopted....., 19.....

CONSTITUTION AND BY-LAWS OF THE TOWNSHIP AGRICULTURAL CLUBS OF THE COUNTY ORDERS OF THE EXPERIMENT ASSOCIATION.

ARTICLE I. NAME.

The organization shall be known as the (Name of township) Agricultural Club of the (Name of County Order) of the Experiment Association.

ARTICLE II. Object.

The object of this organization shall be to promote the agricultural interests of the town, county, and state.

1st. By cooperating with the County Order and State Experiment Association in growing and disseminating pure bred seed grains.

2nd. By having town and individual exhibits at County Fairs and other agricultural exhibitions.

3rd. By having at least one annual meeting and several special meetings in order to report and discuss topics beneficial to the members of the club.

4th. The special meetings should be social in character and the program shall consist of debates, discussions, readings, together with vocal and instrumental music.

ARTICLE III. MEMBERSHIP.

1. Any person may become a member of this township club who is especially interested in agriculture.

2. Honorary membership may be conferred upon anyone interested in progressive agriculture by a majority vote at any annual or special meeting.

ARTICLE IV. DUES.

A fee of twenty-five cents shall be collected from each member annually.

ARTICLE V. OFFICERS.

The officers of this organization shall consist of a president, vice president, and secretary-treasurer, whose term of office shall be one year, or until their successors are elected.

ARTICLE VI. DUTIES OF OFFICERS.

1. It shall be the duty of the president to preside at all meetings of the club, and to enforce the observation of such rules and regulations as will be for the best interest of the organization, to appoint all regular committees as he may deem expedient for the welfare of the Association.

2. In the absence of the president the vice president shall preside and perform the duties of the president.

3. The secretary-treasurer shall keep the records of all meetings and proceedings of the club, also the names of all members and their addresses. He shall also keep the funds of the club, collect all fees, pay all debts, and shall submit a written statement of all moneys received and paid out by him and shall balance his books not later than one month before the annual meeting.

ARTICLE VII. DISBURSEMENTS.

The funds of the club shall be used to defray its expenses or by vote of the club for such purposes as will advance the agricultural interests of the organization and shall be paid out only upon an order signed by the president and countersigned by the secretary.

ARTICLE VIII. AMENDMENTS.

This constitution may be amended at any meeting by a two-thirds vote of the members of the club present.

BY-LAWS.

ARTICLE I.

The officers of this club shall be elected by ballot at the annual meeting.

ARTICLE II.

This club shall be governed by Roberts' Rules of Order. The secretary shall report the organization of the club with names and addresses of officers to the secretary of the county order and the secretary of the state association immediately after organization and all changes annually in officers thereafter.

BUSINESS MEETING

Saturday, 8:30 A. M., Auditorium, Agricultural Hall.

Meeting called to order by President Michels. The minutes of the last meeting were read and approved, after which the following named officers were elected.

President, Henry Michels, Malone

Vice President, J. R. Thorpe, Tavera

Secretary, R. A. Moore, Madison

Assistant to Secy., J. J. Garland, Madison

Treasurer, H. E. Krueger, Beaver Dam

On motion, Mrs. A. F. Howie, Milwaukee, and A. C. Johnson, Chicago, were unanimously elected honorary members of the Association.

REPORTS OF COMMITTEES

Executive Committee—

Meeting held Thursday evening February 10, 1916.

Meeting was called to order by George W. Davies, chairman and the chair appointed J. J. Garland Secretary.

Present—Prof. R. A. Moore

Henry Michels

J. R. Thorpe

J. A. Van Natta

H. E. Krueger

Frank Bell

G. W. Davies

J. J. Garland

Prof. Moore in reviewing the work of the Association for the past year spoke of the splendid exhibit placed at the San Francisco Exposition, the continuance of the experimental work already started and of a plan for coöperation between the State Board of Agriculture and the Association in the exhibiting of Wisconsin Pure Bred Grains.

Discussion on the giving back of entries at future grain shows: Motion made and carried that policy of the Association in returning grains from future shows be left to the discretion of the officers.

Discussion on establishment of districts or divisions of the state for the exhibiting of corn at Association Grain Show: Moved and carried that two districts, a north and south, be made for next year's grain show.

Discussion on exhibiting privilege at Grain Show: Moved and carried that entry fee be left as it was to exhibitors not members of the Association.

Discussion as to when next year's meeting and grain show be held: Moved and carried that this matter be left to discretion of association officers.

Experimental work of the past year discussed and in view of unfavorable season it was decided to continue same lines of work. Moved and carried that Secretary be authorized to expend not over \$100.00 on experiments with acid phosphate.

Moved and carried that secretary be authorized to expend not to exceed \$150.00 for experimental work on sweet clover.

Moved and carried that secretary be authorized to expend not to exceed \$50.00 on soy beans.

Discussion on the association coöperating with the Agricultural College in running a special Seed Grain Train next year. No action taken.

Discussion of a plan for advertising of seed grains by members having seed for sale. No action taken but discussion favored letting the members having large amounts of grain combine in buying advertising space in a manner similar to that of live stock breeders.

Moved to adjourn.

GEO. W. DAVIES,
Chairman.
J. J. GARLAND,
Secretary.

Moved and carried that report be accepted.

Committee on Resolutions—

The following resolutions were read by the chairman, Mr. Cheesman, and unanimously adopted:

RESOLUTIONS

This association in annual meeting assembled records its deep obligation, and sincere thanks to Mrs. Adda F. Howie for her faithful aid and cheerful service in caring for the agricultural exhibit at the Panama Exposition. For more than two months, when no other provision had been made her loyalty to the State of Wisconsin made this valuable display vital by her presence and enabled many an inquirer to obtain information concerning the state; and the inspiration reflected by generous and enthusiastic service.

The agriculturists of Wisconsin express their great sense of loss in the death of our fellow worker, Mr. A. P. Grout, and assure his family of their high appreciation of his worth as a citizen of Illinois and as one of its most untiring workers. We take inspiration from his example and shall remember his consistent, and loyal service as the highest expression of good citizenship.

This association records its sorrow in the parting of our friend and associate, Joseph E. Wing. We desire to convey to his family our warm appreciation of his services in his chosen field of labor. His simplicity of faith, and childlike trust in his fellow men, and the hearty good fellowship which always marked his intercourse with all who met him will forever endear the name he bore to all who remember his cheery smile and encouragement in all good work.

TREASURER'S REPORT

Mr. H. E. Krueger, Treasurer, reported on the financial condition of the association as follows:

Balance in Association Treasury Dec. 18, 1914.....	\$676.63
Received from fees, premium donations, etc.....	921.60
Total Receipts.....	\$1,598.23
Total Disbursements Dec. 18, 1914 to Feb. 1, 1916.....	1,300.87
Balance in Association Treasury Feb. 1, 1916.....	\$297.36

R. A. Moore, Secretary, reported on the use and condition of state funds. His report showed a

Balance in State Treasury Jan. 1, 1915.....	\$3,509.37
State Appropriation July 1, 1915.....	5,000.00
Inspection Fees.....	367.00
Total Receipts.....	\$8,876.37
Total Disbursements Jan. 1, 1915 to Feb. 1, 1916.....	\$5,287.62
Balance in State Treasury Feb. 1, 1916.....	\$3,588.75

The itemized financial reports are on file for inspection in the office of the Association.

HIGHEST YIELDING CORN CONTEST

One of the interesting features of our recent grain show was the display of ears of corn entered by members in this contest. Half of the ear had been shelled and planted on the University Farm last summer while the remaining half was kept for the show. On the farm each ear was planted in a single row, all under the same conditions as near as possible. At harvest time, the yields were carefully weighed and figured on the acre basis.

Altogether about 40 ears were received of the Wis. No. 12 or Golden Glow variety and the yields of the highest 10 are as follows:

Place	Row in field	Yield in lbs.	Grower
1	21	46.5	H. Block, Burlington
2	27	44.5	A. Popp, Jefferson
3	23	40.5	J. Van Loon, La Crosse
4	10	39.5	E. Haman, Monroe
5	24	38.7	W. E. Bishop, Arcadia
6	6	37.5	N. Raessler, Beloit
7	7	37.	J. Wielinga, Midway
8	29	36.8	A. C. Ellickson, Arlington
9	5	36.5	L. M. Hanson, Eleva
10	12	36.	J. R. Thorpe, Tavera

The first 10 ears gave an average yield of 58 bushels per acre. The lowest 10 ears average 37 bushels per acre. Over 20 bushels difference.

It is surprising to note that out of the 40 ears entered the first 10 places went to members of the Association who are prominent growers and sellers of pure bred corn. While it is generally recognized that one ear may yield considerably more than another even when produced by the same grower, yet this last year's contest seems to prove that our members who practice careful selection for the improvement of their corn have been able to increase the productiveness of the individual ear.

Although careful measurements and weights of all the characteristic points of the ear were recorded, no noticeable difference could be seen between the high and low yielding ears.

This coming season a contest will be run with both silver king and golden glow varieties and suitable prizes again offered to the members entering the highest yielding ear of corn.

WISCONSIN'S AGRICULTURAL EXHIBIT AT THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION

L. F. GRABER, Madison

As a result of the coöperation of the Wisconsin Exposition Commission, the Experiment Association and the Agronomy Department of the Agricultural College, Wisconsin's agricultural interests were well represented at the Panama-Pacific International Exposition with an artistic and educational exhibit of the agricultural products and resources of the state. The Exposition Commission at first appropriated \$2000 for a Pure Bred Grain exhibition. Later on it was evident that this sum would not suffice to meet the expense and maintenance of an exhibit which would be in keeping with the prominence of Wisconsin's agricultural industries, and the Commission contributed generously from their meager appropriation by increasing this fund from \$2000 to \$4300. This increase made possible the installation and maintenance of an exhibit which was truly representative of Wisconsin's agricultural progress and supremacy.

MRS. ADDA F. HOWIE IN CHARGE

While at first only pure bred grains and forage crops were to be represented it became necessary that the great dairy industry of our state receive due recognition in the exhibit. An immense dairy scene 106 feet long and 19 feet high, indicative of our prëeminence as the leading dairy state was appropriately added to the display. By far of more importance, however, in the way of portraying the dairy progress of Wisconsin, were the invaluable services of Mrs. Adda F. Howie of Elm Grove, Wisconsin. The exhibit was placed under her personal supervision and direction throughout the entire period of the Exposition

from February to December. No one could have been more eminently fitted for this important position as a true representative of the Badger farmers at the great Exposition than Mrs. Howie. She not only owns the largest and one of the finest herds of pedigreed Jersey cattle in Wisconsin, but her unusual success as a practical farmer has given her a national reputation as the greatest woman authority on dairying in America. For a number of years she was honored as a member of the State Board of Agriculture, and for a much longer period she served on the Farmers Institute staffs of Wisconsin, New York, South Dakota and other states. She was the first to recognize and advocate the importance of tender care and gentleness in rearing well bred dairy stock, and her lectures promulgating these principles, have won her a prominent and permanent rank before the dairy world as the leading farm woman in America.

Her remarkable and pleasing personality and highly interesting and instructive lectures on dairying and crops, given in connection with the exhibit, made it one of the most popular in the Palace of Agriculture. Farmers from all parts of the United States and Canada came to the exhibit for her information regarding dairying and agricultural opportunities in Wisconsin. They were given reliable instruction and a cordial welcome was extended. No other exhibit was so well cared for throughout the entire period of the Exposition. It was kept alive, neat and attractive seven days out of every week, all due to Mrs. Howie's persevering and tactful management. She made the exhibit a decided success, and Wisconsin can well feel proud that her agricultural display was in charge of such an eminent authority and one of such wide reputation.

THE EXHIBIT

A well located section 106 feet long, 30 feet in depth with a wall space 34 feet high provided ample room in the Palace of Agriculture for the display. Wisconsin was fortunate in having her agricultural exhibit with the other state displays in this immense palace rather than in the state building which would not have permitted nearly such an extensive exhibit.

Entering the Palace of Agriculture and proceeding along almost any aisle one could see the immense sign, "Wisconsin, the Leading Dairy State," calling attention to the state's leading industry. Directly below was an enormous artistic painting, 106 feet long and fifteen feet high, showing in the center a beautiful dairy scene representing typical animals of our leading dairy breeds grazing in a Wisconsin pasture. On one end a representation of an immense cheese about fourteen feet in diameter and six feet high was so divided into three parts as to show graphically who makes the nation's cheese. Wisconsin produces 47 per cent, New York 34 per cent, and other states 19 per cent of the United States supply, according to the 1909 census Report of the U. S. Government. Beneath this one could read that one-half the cheese factories in the United States were located in Wisconsin. On the opposite end was an artistic painting of three tubs of butter, the sizes of which showed graphically the production of butter for the three principal states, Wisconsin (131,000,000 pounds), Iowa (127,000,000 pounds), and New York (69,000,000 pounds). That Wisconsin has more dairy cows than any other state was a fact also characterized in an attractive manner.

Under this large sign Wisconsin crops were featured on a wall space 106 feet long and fifteen feet high, artistically divided into appropriate sections for Wisconsin pure-bred corn, wheat, oats, barley, rye, grasses, clovers, the Experiment Association and College of Agriculture. The central section presented the key-note of the exhibit, "Our System of Agriculture, Diversified Crops and Live Stock Farming." In this section was shown why Wisconsin avoids the dangerous one-crop system of farming and how our agriculture is on a permanent and lasting basis for all time to come. Artistically arranged charts and colored photographs of rural scenes illustrating the agricultural practices in Wisconsin which have led to our rapid agricultural development in the past few years were included in this section.

On either side of this central display the wall space was divided into sections to represent separately the various crops such as the Pure Bred Barley, Oats, Rye, Wheat and Corn and Wisconsin Grasses and Clovers. Each of these sections was appropriately decorated with beautiful sheafs and finest specimens of the crops mentioned, with a central

chart giving the production and average yields per acre as compared to neighboring states. In the College of Agriculture section the College was graphically represented as the connecting link between bigger and better crops in Wisconsin and more and better live stock. The Babcock test was shown as Wisconsin's greatest contribution to the dairy industry. Statistics regarding the attendance of the College were given in connection with the three main lines of work of the institution—instruction, experimentation and extension.

WISCONSIN PURE BRED GRAINS

That Wisconsin stands to-day as the leading pure bred seed producing state in the Union was portrayed in the Wisconsin Agricultural Experiment Association section. This Association is composed of 1600 Wisconsin growers of improved pure bred and pedigreed grains. The organization has now been in existence for fourteen years and its members were the contributors of the products which helped make the exhibit such a decided success. The improved grains and seeds bred up by the Experiment Station are disseminated throughout the state in their hands for tests as to yields and quality and further dissemination and growth. The pure bred grain industry of Wisconsin has assumed wide importance. As a result of the numerous winnings at grain shows of national importance a wide reputation and demand for Wisconsin Pedigree Barley, Oats, Corn, Rye and other seeds has sprung up throughout the country. Large shipments have been made to Montana, Minnesota, California and foreign countries by farmers themselves. In numerous state wide tests these pure bred grains have out-yielded the common sorts by 5 to 10 bushels per acre. The Association has an annual grain show at Madison, one of the leading of its kind in the world. All these facts are graphically displayed with attractive charts and photographs. The exhibit gave the pure bred seed industry wide publicity and advertisement and opened up a greater market for our high class Wisconsin grown products.

A large relief map of Wisconsin, loaned by the State Immigration Department was of great value in demonstrating Wisconsin's ideal location near the world's greatest

markets for farm products. With Duluth and Superior to the north and their excellent harbor facilities for lake traffic, Minneapolis and St. Paul to the west and Milwaukee and Chicago and Lake Michigan on the east, Wisconsin farmers are surrounded by the best possible markets for their farm products.

WISCONSIN CORN

Wisconsin's rapid rise as a corn-producing state was shown by the results of the introduction of the pure bred varieties, such as Silver King, Golden Glow, etc., which have rapidly replaced the scrub corns and late maturing varieties which were not adapted. Fortunately Wisconsin crops are not sold off the farm but are fed on the land, and particularly is this true with the corn crop. Wisconsin has more silos (56,000) than any other state in the Union, and over 40 per cent of our corn is harvested for silage purposes. Such important factors as these were emphasized throughout the exhibit in an attractive manner but in such a way that the facts rather than the decorations stood out as the really important features.

One of the attractions of the exhibit was a miniature farm constructed by C. J. Berg, a farmer of Tigerton, Shawano county. It is a replica of his farm made entirely of mosses, grasses and seeds grown on his farm. The accuracy of detail proclaimed the maker a true artist. It was fourteen feet long and seven feet high, and proved to be a great attraction. Thousands of people admired this scene and declared it in every detail a work of art.

WISCONSIN FACTS

Among other striking facts regarding Wisconsin's agriculture which were emphasized in the exhibit are the following:

1. "Wisconsin is a live stock state. Live stock farming enhances soil fertility, the basis of permanent agriculture."
2. "Wisconsin is not a renting state. Over 85% of our farms are operated by the owners."
3. "Wisconsin is a state of rural population. Over 50% of our people live on farms or in small villages"
4. "Wisconsin is the leading pure bred seed state of the Union."

5. "Wisconsin pedigree barley and rye have never been beaten for world championship honors in seven National Grain Shows."
6. "Wisconsin produces 43% of the canned pea supply of the United States."
7. "Wisconsin ranks first in the production of rye; second in the production of potatoes, and fourth in the production of hay."
8. "Upper Wisconsin offers excellent opportunities to the homeseeker. Thousands of acres of cheap fertile lands are now being cleared and rapidly developed into productive farms."

WISCONSIN WINS MANY MEDALS

Over 400 samples of pure bred grains, corn and forage crops grown in every county in the state were exhibited for awards of merit. Nothing but the very finest prize winning samples of the Wisconsin Agricultural Experiment Association state grain show held last December were placed on display. Their outstanding quality and the fact that they were portrayed in open boxes where they could be conveniently handled and examined instead of being bottled up as was the case with many other exhibits proved a great drawing card for those visitors who were particularly interested in agriculture. A total of 72 medals were awarded on Wisconsin products, including twelve of gold, 41 of silver and 19 bronze medals and one honorary mention. A detail list of the winnings as reported to date are as follows:

WISCONSIN STATE AWARDS AT THE PANAMA PACIFIC INTERNATIONAL EXPOSITION, SAN FRANCISCO, CALIFORNIA.

Gold Medals were awarded on:

Agricultural Exhibit—Wisconsin Agricultural Experiment Association, Madison, Wisconsin.

Corn	J. E. Brunker.....	Ridgeway, Wis.
Corn	J. R. Thorpe.....	Tavera, Wis.
Corn.....	H. C. Brueckner.....	Jefferson, Wis.
Corn.....	C. S. Ristow.....	Black River Falls, Wis.
Corn.....	A. A. Austin.....	Janesville, Wis.
Alfalfa	Swartz Bros.....	Cornalfa Farms, Waukesha, Wis.
Tobacco Exhibit.....	W. I. Pomeroy Co.....	Edgerton, Wis.
Tobacco Exhibit.....	Theo. Oberson.....	Westby, Wis.
Wheat.....	Hieron Block.....	Burlington, Wis.
Cranberries.....	Wisconsin Sales Co.....	Grand Rapids, Wis.
Barley.....	Wis. Experiment Assn.....	Madison, Wis.

Silver Medals were awarded on:

Corn.....	R. T. Bohl	Beaver Dam, Wis.
Corn.....	E. E. Clingman.....	Reedsburg, Wis.
Corn.....	Jno. Dettwiler	Monroe, Wis.
Corn.....	O. A. Haney.....	Lone Rock, Wis.

Corn.....	O. J. Hecketsweiler.....	Alma Center, Wis.
Corn.....	H. S. Hintz.....	Oakfield, Wis.
Corn.....	Chas. H. Howitt.....	Randolph, Wis.
Corn.....	A. C. Ellickson.....	Arlington, Wis.
Corn.....	Joe Haus.....	Jefferson, Wis.
Corn.....	George H. Leonard.....	Jefferson, Wis.
Corn.....	Wm. Leonard.....	Jefferson, Wis.
Corn.....	Frank Joos.....	Alma Center, Wis.
Corn.....	Arthur Popp.....	Jefferson, Wis.
Corn.....	Robert Rodwell.....	Baraboo, Wis.
Corn.....	C. S. Ristow.....	Black River Falls, Wis.
Corn.....	E. B. Thorpe.....	Monroe, Wis.
Corn.....	J. Van Loon.....	La Crosse, Wis.
Corn.....	Jippa Wielinga.....	Midway, Wis.
Oats.....	Peter Dengel.....	La Crosse, Wis.
Oats.....	Alfred Kline.....	Lomira, Wis.
Oats.....	Noyes Raessler.....	Beloit, Wis.
Rye.....	Lloyd Hubbard.....	Evansville, Wis.
Rye.....	M. R. Zachar.....	Racine, Wis.
Rye.....	Lewis Groth.....	Cedarburg, Wis.
Wheat.....	J. L. Krause.....	Beaver Dam, Wis.
Wheat.....	Theo. Ward.....	Ft. Atkinson, Wis.
Soy beans (2).....	Robert Ward.....	Ft. Atkinson, Wis.
Soy beans (2).....	Theo. Ward.....	Ft. Atkinson, Wis.
Soy beans.....	M. C. Gorsege.....	Haven, Wis.
Field beans.....	Peter Kneeland.....	Windsor, Wis.
Ginseng.....	J. H. Koehler.....	Wausau, Wis.
Clover (2).....	Arthur Ochsner.....	Plain, Wis.
Clover Hay.....	F. J. Lindley.....	Fox Lake, Wis.
Clover Hay.....	Stanley Sebion.....	Westby, Wis.
Alsike clover seed.....	Schmidt Bros.....	Foxboro, Wis.
Alfalfa.....	P. A. Paulson.....	Hudson, Wis.
Extension Charts.....	L. F. Graber.....	Madison, Wis.
Statistical Charts.....	L. F. Graber.....	Wis. College of Agriculture.
		Madison, Wis.
		Wis. Agri. Exp. Ass'n.

Bronze Medals were awarded on:

Corn.....	E. L. Benedict.....	Beloit, Wis.
Corn.....	R. E. Freehoff.....	Coon Valley, Wis.
Corn.....	Fred Grebe.....	Fox Lake, Wis.
Corn.....	Chas. Getchman.....	North Freedom, Wis.
Corn.....	A. N. Kelley.....	Mineral Point, Wis.
Corn.....	Wm. Schwandt.....	Deer Park, Wis.
Corn (2).....	Wm. Wichern.....	Baraboo, Wis.
Timothy.....	L. Hanson.....	Eleva, Wis.
Alsike Clover Seed.....	P. A. Hemmey.....	Humbird, Wis.
Red Clover.....	J. W. Jung.....	Randolph, Wis.
Red Clover Hay.....	Walter Steinhoff.....	Platteville, Wis.
Rye.....	W. C. Katel.....	Kewaunee, Wis.
Seeds.....	Wm. Leonard.....	Jefferson, Wis.
Seeds.....	L. Teweles & Company.....	Milwaukee, Wis.
Oats.....	Wm. Moos.....	Onalaska, Wis.
Oats.....	E. C. Pommerening.....	Oshkosh, Wis.
Oats.....	A. G. Russell.....	Janesville, Wis.
Barley.....	Herman Schoeneck.....	Enterprise, Wis.

Honorable Mention.

Clover.....	Jas. Koltes.....	Dane, Wis.
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The exhibit was installed and arranged by L. F. Graber of the Agronomy Department of the College of Agriculture. It was planned entirely on an educational basis and an economic expenditure of funds was made along these lines rather than for expensive decorative designs which were the main attraction of so many of the other displays. In the way of advertising and disseminating information regarding our state the exhibit filled its mission. The thousands of visitors who were interested in agriculture received as a result of the exhibit a clear vision of Wisconsin's great agricultural advancement.

PREMIUM AWARDS.

At Annual Pure Bred Grain Show

Feb. 7-12, 1916

COLLEGE OF AGRICULTURE, MADISON, WIS.

10 EARS SILVER KING (WISCONSIN No. 7) CORN.

First Hieron Block, Burlington
 Second J. A. Brunker, Ridgeway
 Third W. J. Steinhoff, Platteville
 Fourth Otto Wolf, La Crosse
 Fifth Jos. T. Hans, Jefferson

10 EARS EARLY YELLOW DENT (WISCONSIN No. 8) CORN.

First Alf. Austin, Janesville
 Second H. E. Krueger, Beaver Dam
 Third Chas. Hull, Tigerton

10 EARS GOLDEN GLOW (WISCONSIN No. 12) CORN.

First Hieron Block, Burlington
 Second S. S. Foster, New Richmond
 Third Jippa Wielinga, Midway
 Fourth J. E. Brunker, Ridgeway
 Fifth Arthur Popp, Jefferson

10 EARS CLARK'S YELLOW DENT (WISCONSIN No. 1) CORN.

First Frank Cairns, Mazomanie
 Second J. W. Jung, Randolph
 Third Jos. T. Hans, Jefferson
 Fourth H. E. Krueger, Beaver Dam

10 EARS NORTH STAR YELLOW DENT (WISCONSIN No. 11) CORN

First Noyes Raessler, Beloit
 Second H. E. Krueger, Beaver Dam

10 EARS MURDOCK (WISCONSIN No. 13) CORN.

First H. C. Brueckner, Jefferson
 Second Justus Brueckner, Jefferson
 Third Chas. Austin, Milton
 Fourth Fred Stublely, Black Earth
 Fifth Arthur Popp, Jefferson

WISCONSIN No. 25 CORN.

First F. E. Tueke, Crivitz
 Second C. A. Correll, Crivitz

10 EARS 8 ROWED RED, YELLOW OR SMUT NOSE FLINT.

First H. T. Draheim, Gotham
 Second Lauren Hustin, Eagle
 Third Arthur Popp, Jefferson
 Fourth H. E. Krueger, Beaver Dam
 Fifth J. W. Jung, Randolph

10 EARS 8 ROWED WHITE FLINT.

- First Chas. T. Leonard, Jefferson
- Second Anton Bohl, Beaver Dam
- Third H. E. Krueger, Beaver Dam
- Fourth Arthur Popp, Jefferson
- Fifth H. T. Draheim, Gotham

10 EARS POP CORN.

- First J. F. Staples, Onalaska
- Second C. H. Howitt, Randolph
- Third Jos. T. Hans, Jefferson
- Fourth H. T. Draheim, Gotham
- Fifth Arthur Popp, Jefferson

SINGLE EAR DENT CORN.

- First H. T. Draheim, Gotham
- Second Jippa Wielinga, Midway
- Third Otto Wolf, La Crosse
- Fourth T. S. Ward, Ft. Atkinson
- Fifth J. A. Bruncker, Ridgeway

50 EARS SILVER KING CORN (WISCONSIN No. 7).

- First S. P. Markle, La Crosse
- Second Anton Bohl, Beaver Dam
- Third Otto Wolf, La Crosse
- Fourth Hieron Block, Burlington
- Fifth Noyes Raessler, Beloit

50 EARS ANY WISCONSIN STANDARD YELLOW DENT CORN.

- First Jippa Wielinga, Midway
- Second H. C. Brueckner, Jefferson
- Third John Van Loon, La Crosse
- Fourth Hieron Block, Burlington
- Fifth Noyes Raessler, Beloit

PECK WISCONSIN PEDIGREE OR ODERBRUCKER BARLEY.

- First Wm. Moos, Onalaska
- Second Otto Wolf, La Crosse
- Third Jos. T. Hans, Jefferson
- Fourth John Schwartz, Antigo
- Fifth Alfred Klein, Lomira

PECK TWO ROW BARLEY.

- First Anton Bohl, Beaver Dam
- Second H. E. Krueger, Beaver Dam
- Third H. T. Draheim, Gotham

PECK WISCONSIN PEDIGREE No. 1 OATS.

- First H. W. Whitehead, Rockland
- Second Lewis M. Hanson, Eleva
- Third P. J. Marmes, Antigo
- Fourth Adolph H. Thompson
- Fifth Roy E. Leemon, Waupun

PECK PEDIGREE No. 5 OATS, OR SWEDISH SELECT OATS (WISCONSIN No. 4).

- First Wm. Moos, Onalaska.
- Second H. W. Whitehead, Rockland
- Third H. E. Krueger, Beaver Dam
- Fourth Erick Mickelson, Pembine
- Fifth J. L. Krause, Beaver Dam

PECK SIXTY DAY OR KHERSON OATS.

- First H. E. Krueger, Beaver Dam
- Second H. T. Draheim, Gotham
- Third Alfred Klein, Lomira
- Fourth G. R. Walch & Son, Antigo
- Fifth Clarence Rhodes, Kansasville

PECK ANY OTHER VARIETY OF OATS.

- First H. E. Krueger, Beaver Dam
- Second De Witt Damp, Dane
- Third L. Leslie, Antigo
- Fourth Wm. Neuburger, Reeseville
- Fifth Ed Peters, La Crosse

PECK WINTER WHEAT.

- First Noyes Raessler, Beloit
- Second J. J. Ihrig, Oshkosh
- Third G. W. Kuhlman, Lowell
- Fourth A. A. Goetsch, Juneau
- Fifth Carl J. Piek, Chilton

PECK SPRING WHEAT.

- First Jos. Schelb, Stratford
- Second Art Blumenstein, Woodruff
- Third Arthur Popp, Jefferson
- Fourth Martin Haevers, Luxembourg
- Fifth Herb. Chelstrom, Turtle Lake

PECK WISCONSIN PEDIGREE WINTER RYE.

- First Ed Whitmore, Wausau
- Second John Schwartz, Antigo
- Third Morgan Grandy, Wausaukee
- Fourth J. G. Kading, Reeseville
- Fifth H. R. Zimmermann, Wausau

PECK MEDIUM RED CLOVER SEED.

- First J. L. Krause, Beaver Dam
- Second Hieron Block, Burlington
- Third A. F. Jacobs, Coloma
- Fourth Robert J. Plenty, Rice Lake
- Fifth Stanley Seibon, Westby

PECK MAMMOTH RED CLOVER SEED.

- First P. S. Graham, Fennimore
- Second J. W. Jung, Randolph
- Third J. L. Krause, Beaver Dam
- Fourth H. E. Krueger, Beaver Dam
- Fifth Peter Kneeland, Windsor

PECK ALSIKE CLOVER SEED.

- First Schmidt Bros., Foxboro
- Second H. E. Krueger, Beaver Dam
- Third J. L. Krause, Beaver Dam
- Fourth Lauren Hustin, Eagle

PECK TIMOTHY SEED.

- First A. N. Kelly, Mineral Point
- Second Lewis M. Hanson, Eleva
- Third H. E. Krueger, Beaver Dam
- Fourth Emil Dregar, Madison
- Fifth J. W. Jung, Randolph

PECK ALFALFA SEED.

First H. E. Krueger, Beaver Dam

PECK SILVER HULL BUCKWHEAT.

First H. E. Krueger, Beaver Dam

Second Arthur Popp, Jefferson

Third Cook Bros., Burlington

Fourth Anton Bohl, Beaver Dam

PECK JAPANESE BUCKWHEAT.

First J. L. Krause, Beaver Dam

Second H. T. Draheim, Gotham

Third Anton Bohl, Beaver Dam

Fourth H. E. Krueger, Beaver Dam

PECK BLACK SOY BEANS.

First A. F. Jacobs, Coloma

Second J. A. Hass, Ellison Bay

Third Max Schlies, Peshtigo

Fourth Elmer Kopp, Eau Claire

PECK GREEN SOY BEANS.

First H. E. Krueger, Beaver Dam

PECK YELLOW SOY BEANS.

First H. E. Krueger, Beaver Dam

Second Arthur Popp, Jefferson

PECK YELLOW FIELD PEAS.

First H. E. Krueger, Beaver Dam

Second Arthur Popp, Jefferson

PECK GREEN FIELD PEAS.

First Martin Haever, Luxembourg

Second H. E. Krueger, Beaver Dam

Third Arthur Popp, Jefferson

PECK SMOOTH PEAS.

First H. E. Krueger, Beaver Dam

PECK WRINKLED PEAS.

First H. E. Krueger, Beaver Dam

Second Arthur Popp, Jefferson

Third J. W. Jung, Randolph

PECK NAVY BEANS.

First H. E. Krueger, Beaver Dam

PECK KIDNEY BEANS.

First Arthur Popp, Jefferson

SHEAF PEDIGREE OR ODERBRUCKER BARLEY.

First H. T. Draheim, Gotham

Second Ed Peters, La Crosse

Third Otto Wolf, La Crosse

Fourth Wm. Moos, Onalaska

Fifth Adolph H. Thompson, Black River Falls

SHEAF TWO ROW BARLEY.

First H. T. Draheim, Gotham

Second Arthur Popp, Jefferson

Third Robert W. Ward, Ft. Atkinson

Fourth H. E. Krueger, Beaver Dam

SHEAF PEDIGREE OR SWEDISH SELECT OATS.

- First Brown Bros., Rhinelander
- Second C. H. Howitt, Randolph
- Third Ed Peters, La Crosse
- Fourth Otto Wolf, La Crosse
- Fifth Walter J. Steinhoff, Platteville

SHEAF WINTER WHEAT.

- First Noyes Raessler, Beloit
- Second Arthur Popp, Jefferson
- Third Stanley Sebion, Westby
- Fourth Wm. Moos, Onalaska

SHEAF SPRING WHEAT.

- First Ed Peters, La Crosse
- Second Arthur Popp, Jefferson
- Third J. L. Krause, Beaver Dam
- Fourth H. T. Draheim, Gotham

SHEAF PEDIGREE RYE.

- First Ed Peters, La Crosse
- Second Adolph H. Thompson, Black River Falls
- Third Noyes Raessler, Beloit
- Fourth Arthur Popp, Jefferson
- Fifth John Schwartz, Antigo

BUNDLE OF ALFALFA.

- First John F. Hesprich, Lomira
- Second P. A. Paulson, Hudson
- Third Walter J. Steinhoff, Platteville
- Fourth Lewis M. Hanson, Eleva
- Fifth Stanley Sebion, Westby

BUNDLE OF RED CLOVER.

- First Walter J. Steinhoff, Platteville
- Second H. T. Draheim, Gotham
- Third A. H. Thompson, Black River Falls
- Fourth Stanley Sebion, Westby
- Fifth Wm. Clemens, Kansasville

BUNDLE OF ALSIKE CLOVER.

- First H. T. Draheim, Gotham
- Second Arthur Popp, Jefferson
- Third H. E. Krueger, Beaver Dam
- Fourth Walter J. Steinhoff, Platteville

BUNDLE OF TIMOTHY.

- First Herman Schoeneck, Enterprise
- Second Schwartz Bros., Waukesha
- Third H. E. Krueger, Beaver Dam
- Fourth C. H. Howitt, Randolph
- Fifth Arthur Popp, Jefferson

BUNDLE OF SUDAN GRASS.

- First H. E. Krueger, Beaver Dam
- Second John Van Loon, La Crosse
- Third Edwin Young, La Crosse
- Fourth Fred P. Grebe, Fox Lake

BUNDLE BLUE GRASS.

- First H. T. Draheim, Gotham
- Second Robert W. Ward, Ft. Atkinson
- Third Theo. S. Ward, Ft. Atkinson
- Fourth A. N. Kelly, Mineral Point

BUNDLE SOY BEANS.

- First Ellis Wynn Roberts, Wild Rose
- Second H. E. Krueger, Beaver Dam
- Third Robert W. Ward, Ft. Atkinson
- Fourth Theo. S. Ward, Ft. Atkinson

HONORARY CLASSES**10 EARS WISCONSIN No. 1 CLARK'S YELLOW DENT.****10 EARS SILVER KING (WISCONSIN No. 7) CORN.**

- First S. P. Markle, La Crosse
- Second Noyes Raessler, Beloit

10 EARS WISCONSIN No. 8 EARLY DENT CORN.

- First Noyes Raessler, Beloit

10 EARS WISCONSIN No. 12 GOLDEN GLOW CORN.

- First Noyes Raessler, Beloit
- Second John Van Loon, La Crosse
- Third C. H. Howitt, Randolph

10 EARS ANY VARIETY 8 ROWED FLINT CORN.

- First Geo. H. Leonard, Jefferson
- Second Wm. R. Leonard, Jefferson

PECK PEDIGREE BARLEY

- First H. E. Krueger, Beaver Dam
- Second C. H. Howitt, Randolph

PECK PEDIGREE No. 1 OATS

- First H. T. Draheim, Gotham
- Second C. H. Howitt, Randolph
- Third H. E. Krueger, Beaver Dam
- Fourth Fred P. Grebe, Fox Lake
- Fifth Alfred Klein, Lomira

PECK PEDIGREE No. 5 OATS OR SWEDISH SELECT OATS.

- First H. T. Draheim, Gotham
- Second J. G. Johnson, Blair

PECK WINTER WHEAT.

- First H. E. Krueger, Beaver Dam

PECK SPRING WHEAT.

- First H. E. Krueger, Beaver Dam

PECK PEDIGREE RYE

- First Noyes Raessler, Beloit
- Second H. E. Krueger, Beaver Dam

SWEEPSTAKES CLASS

BEST 10 EARS SILVER KING CORN OF ENTIRE SHOW.

First S. P. Markle, La Crosse

BEST 10 EARS YELLOW DENT CORN OF ENTIRE SHOW.

First Noyes Raessler, Beloit

BEST PECK WISCONSIN PEDIGREE BARLEY.

First Wm. Moos, Onalaska

BEST PECK WISCONSIN PEDIGREE No. 1 OATS

First H. W. Whitehead, Rockland

BEST PECK WISCONSIN PEDIGREE No. 5 OATS.

First H. T. Draheim, Gotham

BEST 50 EARS SILVER KING CORN.

First S. P. Markle, La Crosse

MEMBERSHIP LIST, 1916

HONORARY MEMBERS

Ames, W. L. Oregon
 Babcock, Dr. S. M. Madison
 Bull, Prof. C. P.
 St. Anthony Park, Minn.
 Cary, Prof. C. P. Madison
 Cheesman, Jas. B. Racine
 Christie, Prof. G. I. Purdue, Ind.
 Emery, Prof. J. Q. Madison
 Harvey, Prof. L. D. Menomonic, Wis.
 Hays, W. M. Washington, D. C.
 Hayes, W. A. Milwaukee
 Henry, Dr. W. A. Wallingford, Conn.
 Howie, Mrs. Adda Milwaukee
 Johnson, A. C. Chicago, Ill.
 Karel, Hon. L. A. Kewaunee

Lehmann, Mrs. Eva. Woodland
 Lehner, Philip. Princeton
 McCormick, G. W. Menominee, Mich.
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 Philips, A. J. West Salem
 Renk, Katharine. Boise City, Idaho
 Rosa, Hon. Chas. D. Beloit
 Russell, Dean H. L. Madison
 Schauer, Hon. A. G. Kewaunee
 Toole, William. Baraboo
 True, Hon. John M. Madison
 Utsunomiya, S. T.
 Sapporo, Hokkaido, Japan
 Utter, Delbert. Lake Beulah
 Wojta, Prof. J. F. Madison

MEMBERSHIP BY COUNTIES

ADAMS COUNTY

Carr, Fred N. Strong's Prairie
 Cook, E. D. Plainville
 Crothers, Floyd. Kilbourn
 Johnson, Billie. Strong's Prairie
 O'Neil, Timmie H. Kilbourn
 Prochaska, Geo. W. Friendship

ASHLAND COUNTY

Johnson, L. M. Ashland
 Peterson, Andrew, Jr. Ashland

BARRON COUNTY

Bartlett, Wm. Barron
 Driver, Viven. Rice Lake
 Erdahl, M. N. Rice Lake
 Hanson, Hector.
 12 Highland St., Rice Lake
 Huser, F. E. Cumberland
 Krippner, L. M. Rice Lake
 Mauerman, F. Chetek
 Ness, Arthur. Cumberland
 Ness, Einar. R. No. 1 Cumberland
 Phillips, Everett. Comstock
 Plenty, R. J. Rice Lake
 Rauchenstein, John. Rice Lake
 Svacina, Jacob, Jr. Rice Lake

BAYFIELD COUNTY

Anderson, John. Grand View
 Bresette, Edw. Bayfield
 Rahmlow, H. J. R. No. 4, Bayfield
 Wittwer, R. E. Cable
 Yderstad, Thoralf. Mason

BROWN COUNTY

Anderson, Sol. Green Bay
 Cashman, Thos. De Pere
 Davis, Evan R. R. No. 5, Green Bay
 De'ahart, L. J. R. F. D., Green Bay
 Delwiche, E. J.
 1221 Chicago St., Green Bay
 Dillon, James H. De Pere
 Holzschuh, Anton. South Kaukauna

Lindeman, Wm. F.
 318-6th St., Green Bay
 Metzler, Lorenz. New Franken
 Nies, Peter. Morrison
 Parins, Celestin J. Green Bay
 Schmidt, Arthur. De Pere
 Schmidt, Elmer C. Wrightstown
 Schmidt, Harold. Wrightstown
 Van Den Heuvel, Frank.
 West De Pere

BUFFALO COUNTY

Bilderbach, W. F. Mondovi
 Bond, Samuel. Mondovi
 Engel, G. H. Fountain City
 Fetting, Elmer. Cochrane
 Hitt, O. A. Alma
 Kaste, A. H. Alma
 Kennedy, B. J. Nelson
 Kennedy, L. J. Nelson
 Kennedy, P. H. Nelson
 Muehleisen, Gottlieb. Alma
 Schlawin, Walter. Cochrane
 Seyforth, H. G. Mondovi
 Suhr, Adolph. Cochrane
 Suhr, O. A. Cochrane
 Whelan, J. V. Mondovi
 Wilk, H. F. Alma
 Wright, Ralph. Mondovi

BURNETT COUNTY

Barge, W. R. Yellow Lake
 Olson, A. H. Grantsburg

CALUMET COUNTY

Christoph, Theo. F. Chilton
 Huebner, Aug. H. Forest Jct.
 Huebner, Munrow. Brillion
 Koehler, J. P. R. 1, New Holstein
 Murphy, A. C. Hayton
 Peik, Arthur C. Chilton
 Peik, Carl J. Chilton
 Sevenich, Tony. Hilbert
 Weber, Clifford. New Holstein
 Wipperman, Wm. Chilton

CHIPPEWA COUNTY

Anderson, Harry	608 N. Grove St., Chippewa Falls
Burnell, Roy	Chippewa Falls
Cherrier Bros.	Chippewa Falls
Christiansen, W. O.	Chippewa Falls
Fawcett, Louis	Stanley
Kelley, Murray	Chippewa Falls
Koepke, Wm. F.	R. No. 8, Chippewa Falls
Kramer, H. F.	Bloomer
Lang, P. M.	Chippewa Falls
Lebeis, Frank	Bloomer
Loether, E. J.	Holcombe
Meaghex, Geo. P.	R. 3, Chippewa Falls
Roe, Edwin	Stanley
Siepert, F. W.	Chippewa Falls
Smith, Bradley O.	Bloomer
Vincent, Chas.	New Auburn

CLARK COUNTY

Anderson, Henry V.	Stanley
Dyre, E. L.	Greenwood
Hansen, Wm. C.	Withee
Kauffman, H.	Loyal
Marvin, E. H.	Loyal
Neff, Charles W.	Neillsville
Nelson, Carl	Greenwood
Peterson, Edwin M.	Curtiss
Sample, F. W.	R. No. 2, Withee
Thompson, Arthur	Curtiss
Umlauf, Rudolph	Dorchester
Wayne, Joseph	Greenwood
Wood, Fred	Owen

COLUMBIA COUNTY

Anacker, Bernhardt	Portage
Bardeen, C. S.	Pardeeville
Batty, Geo. M.	Poynette
Bell, Frank	Columbus
Brereton, Thos. D.	Lodi
Buckley, Lawrence	Kilbourn
Carncross, J. E.	Lodi
Chrisher, Harley	Lodi
Church, W. H.	R. No. 1, Lodi
Derr, Arthur	Columbus
Ellickson, A. C.	Arlington
Gloeckler, Theo.	Portage
Grove, Albert	Columbus
Grove, Christian	Columbus
Hanson, Harry	Kilbourn
Hill, John H.	Wycocena
Hughes, J. W.	R. No. 1, Columbus
Johnson, Theo.	Rio
O'Connor, Edw. F.	Lodi
Richards, R. E.	Lodi
Richards, W. M.	Lodi
Stace, A. J.	Portage
Thomas, Edgar A.	Cambria
Trapp, Peter	R. No. 1, Columbus
Weber, G. H.	Columbus
Wermuth, Geo.	Kilbourn
Wheeler, J. R.	Columbus
Wright, L. A.	Columbus
Young, Rob.	Wycocena

CRAWFORD COUNTY

Aberg, Jacob	De Soto
Brodt, C. D.	Bridgeport
Carter, G. B.	Bridgeport
Cilley, Leslie	De Soto
Hjelle, Ole H.	Soldiers Grove
Hudson, Willie	R. No. 3, Boscobel
Marken, R. L.	Guys Mills
Patten, Wayland	Boscobel
Stevenson, Carl	R. No. 5, Soldiers Grove

DANE COUNTY

Alexander, Arch S.	Macfarland
Anderson, Albert	Mt. Horeb
Anderson, H. C.	Cambridge
Anderson, Henry	Mt. Horeb
Anderson, Nordahl I.	Cambridge
Angvick, Lars	Cottage Grove
Anthony, C. E.	Oregon
Anthony, D. C.	Oregon
Anthony, H. R.	Oregon
Bacon, C. W.	Burke
Belda, W. F.	De Forest
Benson, Ed. E.	R. 5, Mt. Horeb
Berg, Carl O.	Stoughton
Bergum, Andrew	De Forest
Bergum, Arthur	De Forest
Bergum, P. B.	De Forest
Best, Thos. A.	Belleville
Bewick, Thos.	Madison
Brenhaug, Joseph	Cambridge
Brickson, Andrew	Cottage Grove
Brickson, A. C.	Cottage Grove
Brickson, A. M.	Deerfield
Brickson, Sanford	Deerfield
Brigham, Chas. I.	Blue Mounds
Brue, N. H.	De Forest
Cairns, Frank E.	Mazomanie
Chase, J. P.	Sun Prairie
Chatterton, R. W.	Basco
Chatterton, W. E.	Basco
Chipman, W. R.	Morrisonville
Cole, D. E.	Marshall
Daley, Edwin	De Forest
Daley, S. S.	De Forest
Damp, De Witt	Dane
Dreger, Emil	Madison
Drumasky, George	Sun Prairie
Eastman, J. S.	511 State St., Madison
Elvehjem, E. G.	Macfarland
Engelstad, Fred	Cambridge
Ford, J. F.	Mazomanie
Friday, E. E.	Oregon
Garland, J. J.	Madison
Geib, W. J.	314 Campbell St., Madison
Gill, E. R.	R. No. 5, Madison
Gillette, Rufus	Verona
Goth, W. H.	R. No. 6, Madison
Graber, L. F.	Madison
Grady, Geo.	Oregon
Haight, Joe	R. No. 5, Madison
Hanna, O.	Mt. Horeb
Hanna, Sylvan	Mt. Horeb
Hoffman, C. F.	Midway
Hoffman, B. C.	Verona
Holman, Peter	Windsor
Hopkins, B. F.	Morrisonville
Hopkins, J. W.	Morrisonville
Howie, John	Waunakee
Jones, E. F.	Sun Prairie
Kaltenberg & Sons	Waunakee
Kendell, F. W.	Sun Prairie
Kendell, G. W.	Sun Prairie
Kneeland, Peter	Windsor
Koltes, Jas. F.	Dane
Kossman, Oscar	Oregon
Korfmacher, Carl	Cottage Grove
Kuhlman, Arthur H.	Madison
Lee, Lars J.	Cambridge
Lee, Lewis J.	De Forest
Lee, P. A. G.	Deerfield
Lein, L. O., Sr.	Cambridge
Lein, Theo. O.	Cambridge
Leith, B. D.	Madison
Lester, Clayton	121 W. Johnson St., Madison
Lyman, C. A.	Madison
McGinnity, A.	Edgerton
McManus, Webb	Oregon
Marsden, Lawrence W.	Cambridge
Melster, Arthur	Cambridge

Messerschmidt, S. H.	R. D., Madison
Mitchell, Geo.	Cottage Grove
Mitchell, James.	Cottage Grove
Moore, R. A.	Madison
Nelson, O. L.	Cambridge
Norgord, C. P.	Madison
Notseter, O. H.	Deerfield
Orr, Glen H.	R. No. 4, Madison
Pederson, B. S.	Windsor
Rasmussen, H. G.	Black Earth
Reindahl, A. K.	Madison
Renk, Wm. F.	Sun Prairie
Rorge, A. J.	Stoughton
Ross, M. F.	Belleville
Ruste, C. O.	Blue Mounds
Ryan, Gerald T.	Sun Prairie
Simpson, L. L.	Edgerton
Smith, Carl.	Morrisonville
Smith, Sam.	Morrisonville
Sorenson, C. A.	Klevenville
Sprecher, F. F.	Burke
Stone, A. L.	Madison
Stone, R. W.	Madison
Swenson, Erwin C.	Mt. Horeb
Tenjum, A. A.	De Forest
Thompson, Melvin.	Mt. Horeb
Veith, Arthur J.	Sun Prairie
Vroman, H. E.	Verona
Wakefield, Chas. A.	Madison
Wernick, Wm.	De Forest
White, Wm.	Marshall
Willmarth, E. E.	Sun Prairie
Witte, Fred H.	Cottage Grove
Zerbel, Louis.	Madison

DODGE COUNTY

Adams, A. W.	Lowell
Barnes, Horace.	Waupun
Barstow, A. F.	Randolph
Barstow, Jas. E.	Randolph
Becker, H. H.	R. No. 2, Juneau
Beule, E. A.	Beaver Dam
Bohl, Anton.	Beaver Dam
Boothroyd, T. C.	Randolph
Bremer, E. O.	Hustisford
Bush, Leonard.	Waupun
Bussewitz, Orlo J.	R. No. 2, Juneau
Bussewitz, Wm.	Juneau
Canniff, H. T.	Juneau
Canniff, Russell.	Juneau
Craig, Chas. W.	Oconomowoc
Fehling, O. E.	Juneau
Goetsch, A. A.	Juneau
Goetsch, F. A.	Juneau
Grebe, F. P.	Fox Lake
Hasse, Louis.	Juneau
Hesprich, John F.	Lomira
Howitz, C. H.	Randolph
Indermuehle, F. A.	Beaver Dam
Johnston, F. R.	Hustisford
Jones, John G.	Beaver Dam
Jones, O. R., Jr.	R. No. 2, Columbus
Jung, J. W.	Randolph
Krause, J. L.	Beaver Dam
Krueger, H. E.	Beaver Dam
Kuhlman, Gustav W.	Lowell
Lenge, Louis J.	Watertown
Luebke, Albert.	Hustisford
Luebke, Aug. K.	Hustisford
Luebke, Frank W.	Hustisford
Meyer, Albert.	Beaver Dam
Miller, Arthur G.	Oconomowoc
Neuberger, Wm. T.	Reeseville
Owens, W. E.	Fox Lake
Pahlke, N. A.	Juneau
Roberts, R. F.	Randolph
Ruesink, H. G.	Waupun
Ryder, H. E.	Hustisford

Schumann, Hugo S.	Beaver Dam
Voight, Wm. C.	Lomira
Voigt, Fred.	Lomira
Weber, E. H.	Beaver Dam
Westphal, F. C.	Randolph

DOOR COUNTY

Abramson, Joll.	Sawyer
Arneson, Alfred H.	Sawyer
Bavry, Rudolph W.	Egg Harbor
Beyer, Geo.	Egg Harbor
Hass, J. A.	Ellison Bay
Holand, H. R.	Ephraim
Jelinek, Benjamin.	Sturgeon Bay
Larson, Eli.	Sawyer
Mallien, J. A.	Brussels
Martens, Chas. F.	Egg Harbor
Powers, W. C.	Ellison Bay
Swenson, Walter.	Sister Bay

DOUGLAS COUNTY

Findlay, R. W.	So. Range
Fowler, H. D.	Superior
Mertes, Frank.	So. Range
Schmidt Bros.	Foxboro
Smith, A. K.	Superior
Stanbury, Ed.	Superior
2307 Tower Ave.	Superior
Stone, B. N.	So. Range
Vogel, Arthur, 1721-15th St.	Superior
Ward, H. D.	Solon Springs
Webb, W. H.	Superior
1425 Tower St.	Superior

DUNN COUNTY

Brill, Geo. A.	Caryville
Curran, Geo.	Menomonie
Curran, Thos. M.	Menomonie
Dodge, Milford L.	Menomonie
Emerson, Albert.	Wheeler
Gehrking, F. J.	Elk Mound
Kent, H. W.	Rusk
Kent, J. S.	Rusk
Kopp, Elmer F.	R. D., Eau Claire
Langsath, Ingwald.	Menomonie
Mars, Geo. E.	Menomonie
Metzger, H. B.	Menomonie
Ohnstad, Oliver C.	Menomonie
Schlough, Roy.	Wheeler
Sipple, Alfred H.	Menomonie
Stegne, Chris.	Wheeler

EAU CLAIRE COUNTY

Allen, C. L.	Eau Claire
Anderson, Knute.	Eau Claire
Arries, B. M.	Augusta
Arth, Walter.	Eau Claire
Faast, B. F.	Eau Claire
Halbert, J. H.	Augusta
Jackson, Vernon.	Eau Claire
Pierce, M. A.	Fall Creek
Pritchard, J. T.	Eau Claire
Rebensdorf, Fred.	Fairchild
Rosow, Oscar.	Eau Claire
Russell, A. C.	Augusta
Tinker, Arthur.	R. 6, Eau Claire
Winter, W. W.	Eau Claire
Wright, W. C.	R. 4, Eau Claire

FLORENCE COUNTY

Anderson, Victor.	Florence
Bergsten, Emil.	Florence

FOND DU LAC COUNTY

Bonzelet, J. P.	Eden
Briggs, E. T.	R. 7, Fond du Lac
Dickman, Ed.	Brandon

Donovan, F. J.	Vandyne
Finder, Fred.	Vandyne
Gibbard, P. J.	R. No. 7, Ripon
Goebel, Henry N.	R. 8, Fond du Lac
Hammen, Louis H.	Ripon
Hargrave, Robt.	Ripon
Hills, L. H.	Waupun
Hintz, Hugo F.	Oakfield
Horner, G. B.	Ripon
Hughes, C. W.	Campbellsport
Hughes, Harold.	Campbellsport
Hughes, John E.	Campbellsport
Kuehn, Chas. A.	Brandon
Leemon, Roy E.	Waupun
Leith, R. H.	R. No. 9, Vandyne
Lewandoske, Herman F.	Malone
Mang, A. J.	Ripon
Michels, H.	Malone
Michels, Math.	Peebles
Miller, A. H.	Waupun
Miritz, O. F.	Fond du Lac
Murray, A. K.	Ripon
Rather, A. P.	Peebles
Redmond, E. M.	R. No. 4, Calvary
Schmoldt, Clarence.	Rosendale
Schultz, Otto.	Taycheedah
Schussmann, Harry.	Malone
Stanz, Henry.	Fond du Lac
Walgenbach, John.	R. 5 Fond du Lac
Weeks, Tom S.	Fond du Lac
Wilsie, T. C.	Brandon

GRANT COUNTY

Bannén, R. E.	R. No. 3, Boscobel
Bennett, A. J.	Platteville
Bennett, Clarence V.	Platteville
Bennett, O. J.	Platteville
Biddick, Harry E.	Livingston
Bremmer, G. M.	Muscoda
Cubela, Joseph M.	Muscoda
Di Vall, Wm.	Montfort
Flitsch, Floyd.	R. No. 2, Lancaster
Goldman, Herbert H.	Livingston
Graham, Chester H.	Fennimore
Graham, P. S.	Fennimore
Graham, W. A.	Fennimore
Groom, H. L.	Cassville
Hampton, Clark.	Lancaster
Kettler, Clarence J.	Platteville
Kettler, Roy H.	Platteville
Knutson, Murel.	Livingston
Kolar, F. J.	Muscoda
Kreul, H. C.	Fennimore
Krohn, Edw.	Lancaster
Morse, Edw. B.	Mt. Horeb
Pickering, C. R.	Muscoda
Pink, Leo.	Lancaster
Porter, Geo.	Fennimore
Preston, Geo. M.	Montfort
Ralph, Le Roy.	Cuba City
Runde, August.	Sinsinawa
Runde, Elmer.	Sinsinawa
Runde, Frank.	Louisburg
Runde, Lawrence.	Sinsinawa
Sale, John, Jr.	Muscoda
Spencer, R. R.	Boscobel
Steinhoff, Walter.	Platteville
Stivarius, Geo. A.	R. 4, Fennimore
Tiedemann, H. G.	Platteville
Wienbergen, Oscar.	Platteville
Wise, John H., Jr.	Platteville

GREEN COUNTY

Ames, F. M. & Son.	Brooklyn
Biglow, L. F.	Brooklyn
Brown, Wm. A.	Monroe
Chesebro, Roy E.	Monticello
Detwiler, Fred.	Monroe
Detwiler, John.	Monroe
Douglas, O. M.	Brodhead

Geigel, John.	R. No. 6, Monroe
Hoesly, Clarence.	New Glarus
Ingold, Fred.	R. 5, Box 6, Monroe
Jeffery, F. D.	Monroe
Klassey, Henry.	Monroe
Lichtenwalner, Arthur H.	Monroe
Lichtenwalner, C. H.	R. 9, Monroe
Man, H. G.	Brodhead
Morgan, Chas.	Albany
Purinton, C. G.	Monticello
Richards, Ed.	Brooklyn
Smith, Geo. Burr.	Brooklyn
Thorp, Harry E.	Monroe
Trumpy, Fred.	Monroe
Tschudy, Emil.	Monroe
Van Wagenen, Lewis.	Monroe

GREEN LAKE COUNTY

Buzzell, H. L.	Markesan
Davison, Harley.	Markesan
Frel, John.	Markesan
Kutchin, V. S.	Green Lake
Kutchin, Victor.	Green Lake
Page, G. F.	Berlin

IOWA COUNTY

Brunker, J. A.	Ridgeway
Brunker, J. E.	Ridgeway
Convey, Thos.	Ridgeway
Enloe, Jefferson.	Rewey
Farwell, Ray.	Ridgeway
Graber, Edw.	R. D. Mineral Point
Grunenwold, Le Roy C.	Livingston
Kelly, A. N.	Mineral Point
Lauper, Wm. G.	Hollandale
Morrissey Bros.	Arena
Mueller, Alfred.	Arena
Mueller, Henry.	Livingston
Oimoen, Otto.	Barneveld
Paulson, H. E.	Hollandale
Ross, Roland.	Mineral Point
Shannon, H. L.	Avoca
Swenson, W. E.	Hollandale
Van Natta, J. A.	Dodgeville

IRON COUNTY

Peter, Max H. A.	Mercer
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JACKSON COUNTY

Dettinger, Stanley.	Hixton
Erickson, Rob.	Melrose
Haag, Frank.	Melrose
Haag, Henry.	Melrose
Hecketsweiler, O. J.	Alma Center
Huseboe, H. M.	Taylor
Jones, P. W.	Black River Falls
Lane, O. J.	Hixton
McNab, A. J.	Black River Falls
Olsen, A. O.	Black River Falls
Olson, Peter S.	Northfield
Ristow, C. S.	Black River Falls

JACKSON COUNTY

Thompson, Adolph.	Black River Falls
Wallen, Aron.	Taylor

JEFFERSON COUNTY

Abendroth, Walter.	Waterloo
Albertz, E. F.	R. 5, Watertown
Albrecht, John.	R. 6, Watertown
Bauer, Victor W.	Jefferson
Behling, Edwin.	Johnson Creek
Bridge, R. L.	Lakemills
Bridge, Russell W.	Lakemills
Brueckner, H. C.	Jefferson
Brueckner, Justus.	Jefferson
Emmert, H. L.	Johnson Creek

Emmert, O. J.	Johnson Creek
Goecke, P. L.	Watertown
Guttenberg, Fran. Jr.	Jefferson
Hans, Joe.	R. No. 1, Jefferson
Hardtke, Wm.	Watertown
Henning, Geo.	Watertown
Hooper, S. C.	Palmyra
Huppert, Clifford.	Ft. Atkinson
Huppert, Loran.	Ft. Atkinson
Jaeger, H. C.	Ixonia
Krueger, Alex.	Watertown
Lang, R. H.	Jefferson
Lehmann, Theo.	Watertown
Lenn, E. A.	Palmyra
Longley, H. N.	Dousman
Longley, Walter M.	Dousman
Lowe, Harry.	Ft. Atkinson
Lowe, Laverne.	Ft. Atkinson
Niere, Stuart.	Watertown
Northey, F. G.	Palmyra
Northey, Royal.	Dousman
Northey, W. G.	Palmyra
Parsons, Wm. A.	Ft. Atkinson
Popp, Arthur O.	Jefferson
Rabenhorst, B. W.	Jefferson
Rieck, Wm.	Watertown
Thorne, A. J.	Jefferson
Tutton, Sam F.	Palmyra
Ward, Chas. E.	Ft. Atkinson
Ward, R. W.	Ft. Atkinson
Ward, Theo. S.	Ft. Atkinson
Wollin, Albert C.	Johnson Creek

JUNEAU COUNTY

Cuenot, Fred L.	Mauston
Curtis, E. L.	Mauston
Frederickson, E. A.	Necedah
Frederickson, Hans H.	Necedah
Hansen, Harry.	R. 2, New Lisbon
Mead, R. E.	New Lisbon
Miles, Milo E.	Mauston
Moore, Henry G.	Mauston
Nowicki, John, Jr.	Mauston
Remington, H. E.	Mauston
Remington, Merl O.	Mauston
Schroeder, Leonard.	Camp Douglas
Wagner, J. M.	R. 1, Union Center

KENOSHA COUNTY

Barber, Chas.	Trevor
Beimer, Geo.	Salem
Betzer, R. A.	R. No. 1, Kenosha
Cropley, W. R.	Kenosha
Curtis, M. W.	Trevor
Dexter, Walter S.	Kenosha
Holt, Frank & Son.	Pleasant Prairie
Iverson, Carl.	Kenosha
Kerkhoff, Gilbert G.	Bassett
Kreuscher, Wm. R.	Union Grove
Langer, Frank J.	369 N. Chicago St., Kenosha
Lubeno, H. A.	Trevor
Lubeno, H. B.	Trevor
Neuhaus, John.	Bristol
Reynolds, Delos.	Pleasant Prairie
Rhodes, Louis.	Kansasville
Roberts, F. W.	Woodworth
Sheen, C. J.	Salem
Thiers, L. M.	426 Park Ave., Kenosha
Williams, K. B.	R. No. 3, Kenosha

KEWAUNEE COUNTY

Boudnick, John.	R. 7, Kewaunee
Cherveny, Wenzel.	Kewaunee
Collin, D. W.	Luxembourg
Glandt, R. C.	Kewaunee
Haegers, Martin.	R. 4, Luxembourg
Jelinek, Wm.	Kewaunee
Kassner, Edward.	R. 6, Kewaunee
Katel, Wm.	Kewaunee

Krofta, Rudolph.	R. 3, Kewaunee
Nemetz, Frank.	Kewaunee
Prochnow, F. F.	Luxembourg
Schmidt, Wm. Jr.	Algoma
Servais, O. C.	Luxembourg
Stangel, Richard.	R. 1, Kewaunee
Thibodeau, Elmer.	Luxembourg
Zahorick, A. J.	Kewaunee

LA CROSSE COUNTY

Bergum, Arthur.	West Salem
Campion, T. H.	Onalaska
Casey, Harry T.	Argyle
Cashberg, C. M.	Holmen
Davis, L. H.	Bangor
Dawson, W. J.	La Crosse
De Boer, Martin.	Midway
Dengel, Peter.	R. No. 1, La Crosse
Eggler, V.	R. No. 1, La Crosse
Fass, Wm. M. R.	R. 1, Box 3, Onalaska
Griswold, H. W.	West Salem
Harrison, F. A.	Bangor
Hauser, Albert.	R. No. 3, La Crosse
Hemker, F. H.	West Salem
Hoeth, Geo.	La Crosse
Lovejoy, H. D.	West Salem
Markle, S. P.	La Crosse
Moos, Otto.	Onalaska
Moos, Wm.	Onalaska
Nuttelman, Alfred.	West Salem
Nuttelman, Fred.	West Salem
Ofstedahl, Walter.	Holmen
Olson, Gust.	Onalaska
Peters, Edw.	La Crosse
Pralle, Harry.	R. No. 3, La Crosse
Quall, O. P.	Midway
Van Loon, John.	La Crosse
Westerhouse, Garret.	R. 1, Onalaska
Whitbeck, W. F.	Onalaska
Whitehead, H. W.	Rockland
Wielinga, Jippa.	Midway
Wiley, Jewett.	Holmen
Williams, Elias R.	Bangor
Wolf, Otto.	La Crosse

LAFAYETTE COUNTY

Andrews, A. L.	So. Wayne
Ayen, Ole.	Blanchardville
Chapman, J. R.	South Wayne
Denure, Harry.	South Wayne
Gindingning, H. L.	Shullsburg
Homb, H. C.	South Wayne
Ingwell, Albert.	Blanchardville
Kolden, Teddy.	Blanchardville
Maaske, Henry.	South Wayne
Monson, M. O.	Woodford
Perry, Wm. H.	Gratiot
Riechers, E. J.	Belmont
Riechers, F. B.	Belmont
Rood, Henry J.	South Wayne
Rood, Minnick C.	South Wayne
Road, Ole C.	South Wayne
Ruskell, Raymond.	Belmont
Smith, J. F.	Darlington
Strommen, Anton.	Blanchardville
Strommen, Morris.	Blanchardville

LANGLADE COUNTY

Carlson, L. E.	Bryant
Follstad, Anton.	Elcho
Hutchinson, Paul.	Bryant
Marnes, Peter, Jr.	Antigo
Oldenburg, Albert.	R. 1, Antigo
Peterson, Carl.	R. 3, Antigo
Schmidt, Rose.	Antigo
Schwartz, John.	R. 4, Antigo

LINCOLN COUNTY

Baumann, Arthur	Merrill
Baumann, Ed. H.	Merrill
Reich, Walter O.	Irma
Wrabetz, Frank	Tomahawk

MANITOWOC COUNTY

Axley, Walter	Cleveland
Aranda, Albin H.	R. 3, Cleveland
Berge, Albert	Valders
Berge, Otis J.	Valders
Bernhardt, Oscar	R. 2, Two Rivers
Brockhoff, Paul	Manitowoc
Bruhn, J. F.	R. No. 1, Two Rivers
Clusen, Reinhold	Manitowoc
Dvorak, Henry	R. No. 3, Mishicot
Eiseman, Harvey	R. 2, Two Rivers
Garey, James	R. 6, Manitowoc
Gustavson, Chas.	R. 4, Manitowoc
Heidemann, O. C.	R. No. 2, Kiel
Hetzel, Gilbert	Cleveland
Hoefner, Herbert	R. 1, Manitowoc
Jarr, Thorval	Manitowoc
Johannes, Albert	Two Rivers
Kiel, Fred	Manitowoc
Klann, Adolph	Reedsville
Klessig, Edwin	Cleveland
Koellmer, Gustav	Cleveland
Linnane, Dan J.	Reedsville
Lorfeld, A. E.	Cleveland
Lutze, Geo.	Cleveland
Mandel, Arthur	Two Rivers
Moldenhauer, W. C.	R. 1, Manitowoc
Reinertson, R. M.	Valders
Rogney, E. T.	Valders
Sampe, Fred C.	R. 5, Manitowoc
Schuster, Chas. J.	Manitowoc
Stein, Joseph N.	R. 2, Cleveland
Strowig, Wm. A.	Cleveland
Wiegand, O. R.	Cleveland
Witte, Fred	Two Rivers

MARATHON COUNTY

Baesemann, Otto	Edgar
Blogynski, Leo	Athens
Burg, A. G.	Wausau
Burg, Harold O.	R. No. 2, Wausau
Frane, Victor	Colby
Hass, Arthur	Merrill
Hoge, Will	Athens
Kreutzer, Alf. F.	Athens
Maguire, Leo	Halder
Munkwitz, W. E. R.	Edgar
Olson, Melvin	R. No. 1, Mosinee
Parsch, Gustav	Wausau
Powell, Lester J.	Galloway
Reiser, Arthur	Ringle
Runke, Rufus R.	Athens
Schell, Joseph	Stratford
Steinhaus, V. E.	Rozellville
Steinwand, Theo	Colby
Vaughan, John M.	Unity
Von Berg, W. A.	Mosinee
Whitemore, Edw.	Wausau
Zimmerman, C. H.	R. 2, Wausau
Zimmerman, H. R.	Wausau

MARINETTE COUNTY

Bullock, D. S.	Marinette
Christ, Harold P.	Wausaukee
Ramsay, John S.	Peshigo
Remington, Ray	Marinette

MARQUETTE COUNTY

Ellis, John B.	Endeavor
Hamilton, T. S.	Westfield
Hume, Robt. I.	Endeavor

Judd, Roy C.	Endeavor
Lindner, Geo.	Endeavor
Marti, H. E.	Packwaukee
Parrott, A. H., Jr.	Endeavor
Reid, D. H.	Montello
Williams, J. R.	Packwaukee

MILWAUKEE COUNTY

Angebrot, Chas. H.	1303-8th St., Milwaukee
Babcock, Chas. L.	404 Colby-Abbot Bldg., Milwaukee
Barte, Geo. W.	587 First Ave., Milwaukee
Basse, Wm. H.	R. No. 5, West Allis
Benecke, E. H. A.	Milwaukee
Bernhardt, Chas. R.	Hales Corners
Duve, H. F.	Box 126, West Allis
Hickcox, J. Gilbert	White Fish Bay
Kurtze, Otto	R. No. 4, West Allis
Marti, Herman	R. 2, Milwaukee
Meyer, Alfred J.	R. 18, Oakwood
Pagenkoff, Louis	1486-17th St., Milwaukee
Rasche, A. L.	785 Indiana Ave., Milwaukee
Ruff, Harry T.	865-19th Ave., Milwaukee
Sievers, F. J.	Wauwatosa
Stemmler, Wm.	747 Becker, Milwaukee
Swan, N. J.	R. No. 4, West Allis
Von Doerning, Ernest	Oakwood
Warzyn, Art.	Wauwatosa
Weaver, E. W.	Wauwatosa

MONROE COUNTY

Aarness, O. C.	Cashton
Aney, Earle L.	Norwalk
Evans, John L.	Sparta
Foth, E. A.	Norwalk
Foth, F. D.	Norwalk
Freeman, G. A.	Sparta
Hall, Hassen	Sparta
Hanchett, W. H.	Sparta
Harris, R. E.	Warrens
Hubbard, W. E.	Norwalk
Kirst, A. L.	Tomah
Mistele, Wm. O.	Kendall
Muhlenkamp, Leo	Norwalk
Olson, Louis F.	Tomah
Sargent, J. E.	Sparta
Verken, Abner E.	Norwalk
Vieth, H. E.	Norwalk
Wyatt, E. E.	Tomah
Ziese, Fred F.	Kendall
Zirk, P. A.	Kendall

OCONTO COUNTY

Anderson, Alfred	Mosling
Bogsted, A. C.	Lena
Brock, Martin L.	R. 1, Lena
Bubolz, Otto	R. No. 1, Underhill
Cole, Schley	Mountain
John, A. C.	Gillett
Kehl, John	R. No. 1, Oconto
Lembcke, Louis	Oconto Falls
Martineau, Andrew	Gillett
Piepenburg, Bert	Gillett

ONEIDA COUNTY

Blumenstein, Art.	Woodruff
Campbell, Fred	Three Lakes
Grusch, Jos.	Enterprise
Juday, W. D.	Rhineland
Kugel, Chas.	Robbins
Michaelson, Chris.	Hazelhurst

Schoeneck, Gust, Jr.	Enterprise
Schoeneck, Herman	Enterprise
Schoeneck, Otto	Enterprise
Schoeneck, Paul	Enterprise

OUTAGAMIE COUNTY

Bailey, Herbert A.	R. 1, Appleton
Brucewitz, C. H.	Black Creek
Cuff, O. P.	Hortonville
Jamison, Clarence	R. 2, Appleton
Jamison, Harvey	R. 2, Appleton
Jamison, Howard	R. 2, Appleton
Jamison, Rob.	R. 2, Appleton
Jamison, Stanley	R. 2, Appleton
Jamison, W. G.	R. 2, Appleton
Knapstein, Wm.	New London
Letts, E. F.	R. No. 4, Appleton
Lyons, Earl	New London
Masche, Edw. M.	Hortonville
Meulemans, Mathias	Kaukauna
Mueller, Ed. O.	Appleton
Nieman, Arnold	Greenville
Palmbach, Geo. A.	R. 2, Appleton
Prugh, R. Bayard	Kaukauna
Raeder, Wm. Jr.	Sugar Bush
Ryan, Malachi	So. Kaukauna
Schmit, Geo.	R. 16, Greenville
Thoma, Ernest	Sugar Bush
Tubbs, Frank W.	Seymour
Tubbs, Herbert	Seymour
Wickert, Walter H.	R. 4, Appleton
Wussow, C. A.	Seymour

OZAUKEE COUNTY

Bartell, Reinhard	Thiensville
Blank, G. A.	Grafton
Blank, Harry	Grafton
Clansing, Herbert	Grafton
Dineen, C. F.	Cedarburg
Dobberpuhl, Erwin D.	Cedarburg
Kieffer, Mike	Fredonia
Kressin, Reinhold	R. 2, Cedarburg
Kressin, Wm.	Cedarburg
Moths, Alvin C.	Fredonia
Nero, Wm. C.	Cedarburg
Pierner, J. W.	Thiensville
Sorweid, Wm.	R. No. 2, Cedarburg

PEPIN COUNTY

Brooks, Ralph	Arkansas
Gustafson, Theo.	Stockholm
Jahnke, Julius	Pepin
Peters, Charles F.	Pepin
Throne, C. W.	Eau Galle
Fleishauer, C. K.	Arkansas

PIERCE COUNTY

Anderson, Oscar	Ellsworth
Bailey, F. D.	Prescott
Baker, Roy O.	Maiden Rock
Brown, Monro	Bay City
Chapman, J. L.	River Falls
Chapman, W. A.	River Falls
Finstad, Frank	Beldenville
Fox, E. B.	River Falls
Fuller, R. J.	River Falls
Goodwin, H. V.	Maiden Rock
Gustafson, A. R.	Prescott
Hanson, H. O.	Maiden Rock
Jackson, Chas. O.	Spring Valley
Smith, Fred	Spring Valley
Wild, Ed.	River Falls
	Elmwood

POLK COUNTY

Berg, A. E.	Centuria
Chelstrom, H. Herb.	Turtle Lake
Chell, Vivian	Frederick
Engelhardt, Guy C.	Osceola

Engelhardt, N. J.	Osceola
Fahland, Louis	Clam Falls
Jenson, Jens	c/o C. P. A. Jenson, Luck
Johnson, William	Clam Falls
Johnson, Willie N.	Cushing
Klinka, J. S.	Balsam Lake
Larsen, Fred S.	Milltown
Nielsen, Marius	Luck
Perry, E. B.	Amery
Perry, Richard	Amery
Peterson, Henry	R. 1 Centuria
Peterson, Marius	Luck
Rehbein, A. E.	R. 1, St. Croix Falls
Robertson, Axel	Luck
Voltz, Fred	Clear Lake
Wilcox, C. R.	Balsam Lake

PORTAGE COUNTY

Brekke, Anton B.	R. 1, Rosholt
Coyner, J. M.	Amherst Jct.
Frost, H. G.	Almond
Gordon, Le Roy W.	Nelsonville
Hansen, N. P.	R. 2, Amherst Jct.
Kollock, Henry	Bancroft
Olson, Pierce	Amherst
Peterson, A. O.	R. 2, Amherst Jct.
Peterson, Arthur	Nelsonville
Shelburne, A. H.	Bancroft

PRICE COUNTY

Frank, Dismas	Phillips
Hoffman, Conrad	Phillips
Maeder, J. W.	Brantwood
Nelson, Elmer	Prentice

RACINE COUNTY

Block, Hieron J.	R. 22, Burlington
Bradley, J. F.	Franksville
Bryant, Clifford	Racine
Chambers, O. Q.	Union Grove
Cook, Geo. L.	Burlington
Cook, J. O.	Burlington
Cooper, Archie H.	Franksville
Dunkelow, W. H.	Franksville
Erle, Geo.	Caledonia
Hess, Geo.	Franksville
Mekulecky, Jos.	Racine
Nelson, H. A.	Union Grove
Nelson, R. W.	Union Grove
Renak, Edw.	Racine
Rhodes, Clarence	Kansasville
Rhodes, F. L.	Kansasville
Roberts, W. H.	R. 20, Burlington
Rolfson, C. E.	Waterford
Schelling, Edw. W.	R. 2, Racine
Schelling, J. J.	R. 2, Racine
Scott, John C.	Caledonia
Stephen, Geo.	R. No. 1, Racine
Zachar, M. R.	R. No. 1, Racine

RICHLAND COUNTY

Draheim, H. T.	Gotham
Fogo, Geo.	Gillingham
Ghastin, Floyd	Twin Bluffs
Jewel, Harold	Viola
Matthes, Fred G.	Viola
Nourse, Glen	Sextonville
Post, H. L.	Sextonville
Smith, J. H.	Gotham
Stanek, V. T.	Gotham
Strang, Frank	Bloom City
Thorpe, J. R.	Lone Rock
Turgasen, H. A.	Tavera
Turgasen, J. H.	Richland Center
Welton, G. E.	Richland Center
	Twin Bluffs

ROCK COUNTY

Austin, A. Janesville
Benedict, E. L. Beloit
Caldo, Leslie. Janesville
Clarke, Perle H. Milton Jct.
Coon, Elam P. Milton Jct.
Dougan, W. J. Beloit
Gooch, O. D. Hanover
Greene, J. H. Clinton
Hahn, Robt. F. R. 3, Clinton Jct.
Homes, G. A. Beloit
Howorth, Arthur. R. 1, Janesville
Huebbe, E. Beloit
Johnson, Arthur F. Milton Jct.
Johnson, Roy M. Edgerton
Jones, Arthur E. Janesville
Kramer, Lawrence A. Edgerton
Lentell, Bennie V. R. 25, Beloit
Miller, H. E. R. 8, Janesville
Moore, F. W. R. No. 30, Beloit
Raessler, F. H. Beloit
Raessler, N. R. Beloit
Rosenthal, Fred W. Evansville
Sayre, J. E. Edgerton
Shuman, Frank. Koshkonong
Strouse, Lyman L. Edgerton
Waldmen, Fred. Janesville
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Arnquist, J. F. New Richmond
Arnquist, J. R. New Richmond
Aune, H. A. Baldwin
Bader, Alfred. New Richmond
Bader, R. C. New Richmond
Bennett, W. E. New Richmond
Brown, O. H. New Richmond
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Dowling Bros. Hudson
Fay, A. W. New Richmond
Fay, R. E. New Richmond
Fillback, Walter. Hudson
Poster, S. S. New Richmond
Gindley, E. W. Hudson
Gust, Wm. R. No. 2, Deer Park
Heebink, Henry. Baldwin
Heebink, Wm. Baldwin
Hogan, E. J. New Richmond
Imrie, David. Roberts
Jabusch, Arthur. R. No. 2, Deer Park
Jabusch, Henry. R. No. 2, Deer Park
Jabusch, Wm. Deer Park
Jones, F. B. Deer Park
Kruschke, A. C. New Richmond
Legrid, H. E. R. No. 1, Deer Park
Legrid, Wm. R. No. 1, Deer Park
Lowe, Hugh. River Falls
McGinley, Wm. Baldwin
Meinpe, Emil. Somerset
Neitte, Ed. Deer Park
Rudd, R. R. Deer Park
Ruemmele, Albert. Hudson
Ruemmele, Geo. J. Hudson
Ruemmele, J. F. R. 1, Hudson
Schwandt, Wm. Deer Park
Sether, Nels. R. 1, Deer Park
Stiles, Chas. L. Hudson
Thome, Raymond. Hudson

Thorne, F. W. Hudson
Torkelson, Arthur. R. 2, Deer Park
Tracy, Lyman. New Richmond
Uber, Dewey. New Richmond
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Wessels, Henry. Baldwin
Williamson, G. S. R. 2, Deer Park

SAUK COUNTY

Payles, D. A. Merrimack
Borck, Sam. North Freedom
Border, Merrill A. Baraboo
Claridge, Albert. Reedsburg
Clingman, E. E. Reedsburg
Clingman, W. D. Reedsburg
Davies, G. W. North Freedom
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Fredrickson, Fred. Spring Green
Gonsolin, Fred E. Reedsburg
Hatz, J. A. Prairie du Sac
Hinrichs, Ernest. Reedsburg
Johnson, Glenn. R. 2, Baraboo
Johnston, Marvel. Limeridge
Jones, Glen. Merrimack
Kinsman, Glenn. Lavalie
Kuehn, H. F. Spring Valley
Langdon, Earl. Baraboo
Lawrenz, H. L. R. 1, Reedsburg
Lillich, Wm. Merrimack
Lindsay, John E. Reedsburg
McGilvra, Ed. Baraboo
McGinnis, Chas. Baraboo
McLeish, Roy. Merrimack
Metcalf, Harlan. Spring Green
Metcalf, Raymond. Spring Green
Montgomery, Lyman. Reedsburg
Ochsner, Arthur. Plain
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Peck, H. B. Spring Green
Peck, Lionel E. Spring Green
Premo, W. H. Baraboo
Robson, Forrest. Spring Green
Rodewald, W. C. Baraboo
Rupf, Edw. F. Sauk City
Rusch, Albert. Reedsburg
Rusch, E. W. Reedsburg
Sprecher, Wesley. Plain
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Stuchert, Erwin H. Lone Rock
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Trueb, Waldo R. Spring Green
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Kies, John. Winter
Uhrenholdt, Jens. Hayward
Uhrenholdt, S. J. Hayward

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Gjermanson, Martin. Tigerton
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Naber, H. L. Cecil
Noorbon, Gust. Eland
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Pleshek, Frank. Shawano
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SHEBOYGAN COUNTY

Athorp, Geo. O. R. 6, Haven
Athorp, W. G. R. 1, Sheboygan
Deer, Joseph D. Sheboygan Falls
Frauenheim, O. R. Random Lake

Herberer, C. H.	R. No. 9, Adell
Hoppert, M. J.	R. No. 4, Sheboygan
Kappel, Gustav	Waldo
Knoener, Geo.	Plymouth
Liebenstein, F. L.	Cascade
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Opgenorth, Anton E.	Sheboygan
Parrish, J. O.	Plymouth
Reineking, Rudolph H.	Sheboygan Falls
Rock, Carroll G.	R. 26, Plymouth
Saemann, Maurice	Adell
Streiber, W. G.	R. 33, Elkhart Lake
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Buehler, Geo.	Medford
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Schemanski, Albert	Stetsonville

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Bishop, W. E.	Arcadia
Bohnstedt, L. S.	Trempealeau
Brovold, A. J.	Ettrick
Carlson, Ed.	Pigeon Falls
Chappell, G. E.	Trempealeau
Eid, Albert	Pigeon Falls
Ekern, Alfred	Ettrick
Hagestad, A. C.	Ettrick
Hanson, L. M.	Eleva
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Hegge, Albert	Galesville
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Johnson, J. G.	R. No. 3, Blair
Kinservick, Thor	Whitehall
Lamberson, R. A.	Whitehall
Lehnerts, Edmund	Arcadia
Markham, F. C.	Independence
Mattison, Thos.	Blair
Moen, Gilbert	Eleva
Nelson, Newell	Whitehall
Peterson, Bros.	Blair
Reid, Geo. R.	Independence
Ristau, E. O.	Osseo
Strader, Rolla A.	Osseo
Thompson, A. L.	Blair
Thompson, E. H.	Blair

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Amodt, J. C.	Viroqua
Bendel, John	Stoddard
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Davis, J. Kenneth	Viroqua
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Errickson, H. N.	Cashton
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Getter, Pearl	Viroqua
Gianoli, John A.	Genoa
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Johnson, Alf.	Westby
McClurg, Harry	Viroqua
McClurg, Walter	Viroqua
McMullin, Ray	Viroqua
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Rundahl, Alton	Coon Valley
Sebion, Stanley	Westby
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Ames, Lloyd	Elkhorn
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Wright, John	Whitewater

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Soholt, Ole S.	Madge

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Groth, Louis	Cedarburg
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Puls, John	Hartford
Salter, Milo	R. 5, West Bend
Schottler, C. J.	So. Germantown
Schowalter, E. J.	Jackson
Techtman, C. W.	R. 4, Kewaskum
Ziemer, P. F.	R. 2, Jackson

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Brady, L. A.	Mukwonago
Butler, G. C.	R. 20, Templeton
Christensen, John L.	Hartland

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 Connell, W. A. Menomonee Falls
 Cumming, G. H. Dousman
 Dibble, Roy. R. 18, Menomonee Falls
 Dobbertin, Grover. Hartland
 Edwards, David R. R. 31, Wales
 Emery, Raymond J. Oconomowoc
 Fuller, Stanley. North Lake
 Goetz, Clarence. R. 22, Waukesha
 Gunderson, Forrest. Oconomowoc
 Gunderson, A. Lee. Oconomowoc
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 Hall, John. Hartland
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 Hill, J. T. Waukesha
 Hill, W. H. Brookfield
 Husten, Lawren E. Eagle
 Ingels, J. E. Wales
 Jeffery, H. B. Menomonee Falls
 Kollath, Wm. Menomonee Falls
 Kuhtz, Conrad H. Waukesha
 Kuhtz, P. H. R. No. 1, Waukesha
 Lean, Roy. Dousman
 Lobdell, M. C. Mukwonago
 Luebke, Wm. R. 26, Oconomowoc
 Lurvey, Clayton. Dousman
 Messner, Arthur G.
 Owendale Farm, Genessee
 Mitchell, C. J. Brookfield
 Mitchell, Dean S. Brookfield
 Mitchell, Paul. Brookfield
 Mitwede, Henry. R. 1, Waukesha
 Nicholas, D. C. R. 4, Waukesha
 Omann, E. H. North Lake
 Otto, Alfred H. Oconomowoc
 Petersen, Carl T. North Lake
 Phurvey, Clayton. Dousman
 Reather, Edward. Lannon
 Reather, Herman. Lannon
 Reyer, W. R. Templeton
 Rosenow, Arthur. Oconomowoc
 Rosenow, H. E. Oconomowoc
 Schuster, W. M. Oconomowoc
 Seitz, Adam. Waukesha
 Sleep, S. S. North Lake
 Swartz Bros. Waukesha
 Tebbetts, Frank. Plainfield
 Voje, J. H. Jr. Oconomowoc
 Weir, Robt. J. Mukwonago

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 Constance, F. R. Waupaca
 Daniels, Dallison. R. 3, New London
 Heinke, O. A. Sugar Bush
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 Jacklin, Leon. Waupaca
 Keating, F. E. Ogdensburg
 Keating, J. R. Ogdensburg
 Kendall, Myron. Iola
 Kneip, Wm. Weyauwega
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 Mueller, Ed. W. Bear Creek
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 Olson, Ludvik C. Scandinavia
 Pirner, Carl. R. No. 4, Manawa
 Pirner, John. R. No. 4, Manawa
 Potts, A. R. Waupaca
 Rowe, A. B. Waupaca
 Sawall, Lewis A. New London
 Schmidt, Nicholas. New London
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 Schroeder, Alvin. Bear Creek
 Sether, Earl M. Iola
 Shambaan, A. D. Ogdensburg
 Smith, Henry. R. 4, Waupaca
 Stearns, Arlington C. Weyauwega

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 Tubaa, O. G. Iola
 Virchow, L. C. New London
 Vollbrecht, Frank. R. 40, Bear Creek
 Weinnann H. R. No. 2, Iola
 Williams, Faville D. Bear Creek
 Williams, Stanley A. Bear Creek

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Barnes, P. H. Hancock
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 Eager, Roland D. Hancock
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 Leach, John F. Wautoma
 Leach, Leonard. Wautoma
 Roberts, Ellis W. Wild Rose
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 Simonson, Clarence. Wautoma
 Simonson, Glenn. Wautoma
 Spear, L. W. Plainfield
 Storzbach, Emil M. Plainfield
 Thompson, Ellef N. Wautoma
 Thompson, H. A. Wautoma
 Thompson, Martin. Wautoma
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 Cross, A. J. Allenville
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 Harness, W. G. Neenah
 Ihrig, J. J. R. 4, Box 8A, Oshkosh
 Jackson, Van E. R. 7, Oshkosh
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 Lipsitz, Bessie. R. 8, Grand Rapids
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 Carter, Cyrus.....
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KANSAS

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 Kirk, C. S..... Salesville
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Hunter, Roy..... West Claremont

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 Ludham, James E..... Hewlett
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 Lawson, A. C.....
 R. 1, Box 46, Kenmare

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 Ollivier, E. L.....
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 Rorer, Wm. A..... Mt. Gretna
 Watt, H. C.....
 840 Inwood St., Pittsburg

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Brown, Laurel H..... Edgemont
 Bussey, E. W..... Tabor
 Conklin, Raymond D..... Oldham

TENNESSEE

McKay, J. A..... Franklin

TEXAS

Foster, H. B..... Kern's Place

UTAH

Carey, J. E. L..... Fruitland

15th
FOURTEENTH ANNUAL REPORT

OF THE

**Wisconsin
Agricultural Experiment Association**

With Fourth Annual Report of

ALFALFA ORDER

**ADDRESS OF PRESIDENT, SECRETARY'S REPORT WITH PAPERS
AND ADDRESSES GIVEN BY MEMBERS OF THE
ASSOCIATION AND OTHERS INTERESTED
IN PROGRESSIVE AGRICULTURE**

COMPILED BY

R. A. MOORE, *Secretary*



**MADISON, WIS.
CANTWELL PRINTING CO., STATE PRINTER
1916**



FIFTEENTH ANNUAL REPORT

OF THE

**Wisconsin
Agricultural Experiment Association**

With Fifth Annual Report of

ALFALFA ORDER

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MADISON, WIS.
DEMOCRAT PRINTING CO., STATE PRINTER
1917

LETTER OF TRANSMITTAL

WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION.

MADISON, WIS., 1917.

To His Excellency, EMANUEL L. PHILIPP,
Governor of the State of Wisconsin:

Sir—I have the honor to submit for publication, as provided by law, the Fifteenth Annual Report of the Wisconsin Agricultural Experiment Association, showing the receipts and disbursements the past year, also outlines for experiments, and addresses and discussions given at the annual meeting at Madison, February 8th to 10th, 1917.

Respectfully submitted,

R. A. MOORE,

Secretary



Seed Grain Exhibit of the Pure Seed and Home Power Special.

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Frank Bell, Pres.; Rufus Gillette, Vice Pres.; R. A. Moore, Sec.; Peter Swartz, Treas. Officers of the Experiment Association for 1917.

OFFICERS—1917

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COMMITTEES

Executive:

GEO. W. DAVIES.....	North Freedom
J. R. THORPE.....	Tavera
A. L. Stone.....	Madison
J. B. Cheesman.....	Racine
JESSE VAN NATTA.....	Dodgeville

Resolutions:

J. B. CHEESMAN.....	Racine
C. P. NORGORD.....	Madison
H. E. KRUEGER.....	Beaver Dam

Finance:

C. P. NORGORD.....	Madison
H. N. Longley.....	Dousman
H. E. KRUEGER.....	Beaver Dam

Cooperative Experiments:

Farm Crops.....	R. A. MOORE
Soils.....	A. R. WHITSON
Farm Engineering.....	F. M. WHITE
Agricultural Chemistry.....	E. B. HART
Agricultural Extension.....	K. L. HATCH
Farm Management.....	D. H. OTIS

CONSTITUTION AND BY-LAWS

CONSTITUTION.

Article I.—Name.

This organization shall be known as the Wisconsin Agricultural Experiment Association.

Article II.—Object.

The object of this association shall be to promote the agricultural interests of the state.

1st. By carrying on experiments and investigations that shall be beneficial to all parties interested in progressive farming.

2d. To form a more perfect union between the former and present students of the Wisconsin College of Agriculture so as to enable them to act in unison for the betterment of rural pursuits in carrying on systematic experiments along the various lines of agriculture;

3d. By growing and disseminating among its constituency new varieties of farm seeds and plants;

4th. By sending literature bearing upon agricultural investigations to its membership, and

5th. By holding an annual meeting in order to report and discuss topics and experiments beneficial to the members of the association.

Article III.—Membership.

Section I. All former, present and future students and instructors of the Wisconsin College of Agriculture shall be entitled to become members of this association.

Section II. Honorary membership may be conferred upon any one interested in progressive agriculture by a majority vote at any annual or special meeting of the association.

Article IV.—Dues.

A fee of fifty cents shall be collected from each member annually.

Article V.—Officers.

The officers of this association shall consist of a president, vice president, secretary, and treasurer, whose terms of office shall be one year or until their successors are elected.

Article VI.—Duties of Officers.

Section I. It shall be the duty of the president to preside at all meetings of the society and enforce the observance of such rules and regulations as will be for the best interest of the organization; to appoint all regular committees as he may deem expedient for the welfare of the association.

Section II. In the absence of the president, the vice president shall preside and perform all duties of the president.

Section III. It shall be the duty of the secretary to keep all records of the association; to report the results of all cooperative experiments carried on by its membership and the experiment station, plan the experimental work for the members of the association, and labor for the welfare of the society in general.

Section IV. The treasurer shall collect fees, keep secure all funds of the association and pay out money on the written order of the secretary, signed by the president. He shall furnish bonds in the sum of two thousand dollars, with two sureties, for the faithful performance of his duties.

Article VII.—Amendments.

This constitution may be amended at any annual meeting by a two-thirds vote of the members of the association present.

Amendment No. 1.—Adopted Feb. 9, 1906.

Any person residing within the state having completed a course in agriculture in any college equivalent to that given by the Wisconsin University, may become a member of this association under the same regulations as students from the Wisconsin College of Agriculture.

Amendment No. 2.—Adopted Feb. 11, 1909.

Any County Agricultural School within the state may be admitted to membership of the Experiment Association upon request by the principal of such school and the payment of an annual fee of \$1.00.

BY-LAWS.

Article I. The officers of this association shall be elected by ballot at the annual meeting.

Art. II. The president and secretary shall be ex officio members of the executive committee.

Art. III. This association shall be governed by Roberts' Rules of Order.

Art. IV. All members joining at the organization of this association shall be known as charter members.

Art. V. The time and place of the annual meeting shall be determined by the executive and program committees.

Constitution adopted and organization effected Feb. 22, 1901.



Best display of corn ever gotten together in Wisconsin. Pure Bred Grain Show, 1917.

FIFTEENTH ANNUAL REPORT
OF THE
Wisconsin
Agricultural Experiment Association

PRESIDENT'S ANNUAL ADDRESS.

HENRY MICHELS, Malone.

I consider it not only a very pleasant duty, but a high honor to call to order this meeting of the Wisconsin Agricultural Experiment Association. I have been a member of this organization for ten years and have watched its growth and its work very closely, yet the real bigness of the undertaking is only beginning to dawn upon me.

When we hear Prof. Moore tell us that we have nearly two thousand members; that these members last season sold a million and a half dollars worth of seeds; that they have almost completely eradicated scrub crops from the state; I wonder if we really appreciate what this means.

It was my good fortune, this winter, to get about the state considerably working in Farmers' Institutes. Almost without exception I found members of the Experiment Association in attendance at every meeting and most of them were taking leading parts. This shows that there is a representation of the association in every locality in the state. More than that, the results of their work are everywhere evident. They are reflected in the exhibits of corn and grains shown at the various meetings in which the pure bred strains predominate almost to the exclusion of others. Farmers in general reflect it themselves because all of them now are able to converse intelligently about standard varieties of farm seeds, while a few years ago, oats were oats; corn was either white dent, yellow dent or flint. Individually, the men who are members of the association could never have achieved the results that have been attained by our organized and well-directed effort within these few years.

The members saved the day for Wisconsin last season with respect to our present and future corn crops. While they were not able to supply nearly enough seed to plant the entire acreage of the state, yet they had a large enough stock of fire dried seed to perpetuate our pedigree strains and by the end of another year there will again be sufficient to supply everyone. Had it not been for the seed saved by our members; had we been obliged to fall back upon our old sources of seed corn, we should have been forced to plant our entire corn acreage with southern grown crib corn and the work of years of breeding would have been wiped out in a single season. The State of Wisconsin would have fallen out of the corn belt, and it would have required many years to restore her to her present position as leader in the procession of great corn states.

While it has been repeated often, a word with reference to the quality of our goods is never out of place. We make a bid for the seed business on the strength of our argument that the Experiment Association stands for the best—that we have a higher grade of goods than can be bought through the ordinary channels. It is our duty as individuals to substantiate this claim in every way possible. We must not lose sight of the fact that the association makes it possible for us to do business as we are doing it and that every deal we make must be of such character that the reputation of the association will not suffer.

There is great need for more business-like methods; a business of a million and a half a year is an immense volume and deserves the most careful attention. A single concern doing as much business as this would employ highly trained men to manage their sales. First, they would spend huge sums of money in advertising their goods to get in touch with people who want to buy. Dividing the cost of their advertising by the number of responses they would find that each name they get costs them about ten cents. It would cost them these ten cents whether they could induce the inquirer to buy or not, therefore they would get as high a percentage of orders as possible. To this end, they would put a great deal of careful thought into the reply sent out to each inquiry, using every legitimate argument to induce the party to buy. Having landed the order, they would endeavor to fill it to the complete satisfaction of the

customer. Successful enterprises of today are founded upon the theory that a satisfied customer brings another, and every deal must be made with an eye to the future. To sum up the whole matter we come to this: The Experiment Association was organized for the purpose of increasing the production of our farm crops and not to furnish an outlet for our surplus seeds. The business we get through inquiries received in Prof. Moore's office is incidental to our work and is not the primary object of our organization. Each member must manage the selling end of his own business. The better he manages it, the larger it will grow. The principles and practices involved in the successful disposition of a million and a half dollars worth of seed are the same whether the business is done by a single corporation or by 2,000 members acting as individuals. The following rules will apply in any business—large or small:

First. Advertise.

Second. Answer each inquiry honestly, promptly, fully, clearly, intelligently, individually.

Third. Use printed stationery, and if the business is large enough to warrant it, use a typewriter and printed circulars.

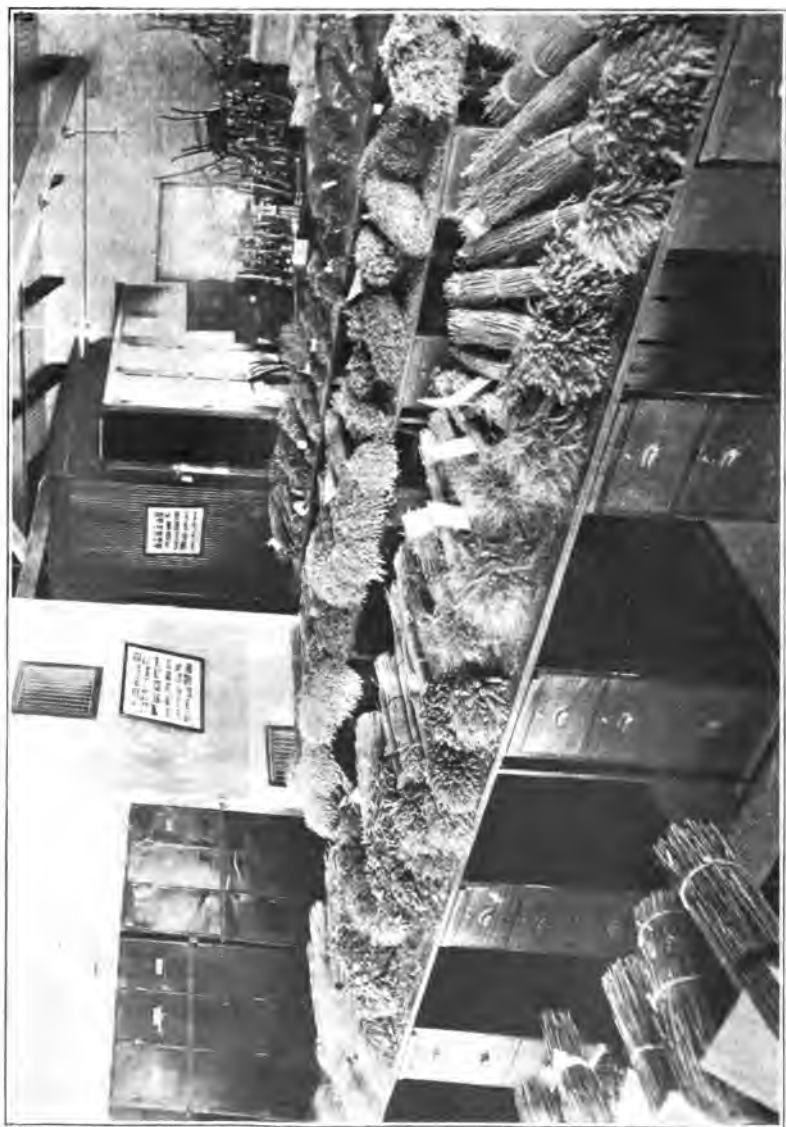
Fourth. Ship seeds promptly, in substantial packages, and strictly of the same grade as promised.

Fifth. Be willing to trace delayed consignments for your customers, and put in claims against carriers for damaged shipments. Make your customer understand that your interest in him does not cease when you have his money.

Sixth. Back up your goods with the most liberal guarantee you can give even though it may appear that you are giving the customer too much leeway.

Seventh. If you are in the habit of getting out a printed circular, send one to each customer the next season as a reminder that you are still in business.

Our worthy secretary has prepared a fine program that I know will be of interest and great value to everyone. I wish to say, however, that the addresses which will be delivered here are only half the program. You are the other half and we want you to carry out your part not only by giving close attention to the speakers but by entering freely into the discussions.



More sheaf grains were entered in competition at the 1917 Pure Bred Grain Show than ever before.

SECRETARY'S ANNUAL REPORT FOR 1916

R. A. MOORE, Madison.

Members of the Wisconsin Experiment Association:

It gives me great pleasure to again bear evidence of the marked progress of the Wisconsin Experiment Association. We are now nearing the sixteenth anniversary of the time of our inauguration, and it is a pleasure to have witnessed the rapid strides made by our association during the past sixteen years. The Wisconsin Experiment Association is everywhere known. Even in the remotest part of the world people know the Wisconsin Experiment Association. It has been the pleasure of your Secretary to have delegations come from as far away as Australia, England, China, and Japan to secure information and study the work of your association. Numerous states have patterned closely after our organization and have already started work similar to what we are now doing. We have as far as possible encouraged the other states along this line of endeavor as we feel that through systematic organization we can succeed in overcoming obstacles which could not be overcome by individual effort. Our association stands out boldly for pure bred seeds and pure bred stock upon every farm in America, and we confidently feel that with this great motto on our banner we will succeed to a great extent in solving the great question which is now before the American people of keeping the boy upon the farm. It has been through the Experiment Association largely that thousands of young men have found the farm a source of great revenue and are now content to take up systematic agriculture and place the same upon a much higher plane. The farmer of today is placed upon a far different plane than he was at the time when scrub stock and scrub seed grains were the products of the farm, and it has been largely through the College of Agriculture and your Experiment Association that this has been accomplished.

MEMBERSHIPS

The membership of the Experiment Association has gradually grown until at the close of 1916 we had 1,415 members. This great membership is very encouraging, and merely represents the members that were paid up to date. We have many members that will pay up later, so it is safe to say that the bona fide membership in the state Experiment Association is at least 2,000. The larger portion of these members are engaged in the production of pure bred seed and pure bred live stock, and through their enterprise and endeavor have built up this line of effort until it is an object lesson that their neighbors can safely pattern after.

COUNTY ORDER

At the present time fifty-two counties are organized under the head of County Orders. During the past year we have organized Forest and Calumet counties, and there are several more counties that have already asked for admission and will be organized during 1917. In the fifty-two County Orders there is an approximate membership of about 3,000. These members are loyal to their Order and many of the members are also members of the State Association. We find that it is only the careful, progressive farmer that unites with the County Order, and is a safe man under the direction of the Order to carry on work with pure bred seeds. The work done by these County Orders is wide and far-reaching, and covers completely the activities of the counties in which these Orders are organized.

ALFALFA ORDERS

No organization in our state has made more rapid progress than the Alfalfa Order under the leadership of J. B. Cheesman, President, and L. F. Graber, Secretary. These men are deserving of great credit for the work performed in establishing one of the most active lines of effort connected with our Experiment Association. The Alfalfa Order reaches out to all portions of the state, and has established this beautiful crop, alfalfa, upon practically all of the leading and progressive farms of Wisconsin. We cannot measure its great good in dollars and cents, but we know that it has

been instrumental in more than doubling the alfalfa crop in Wisconsin since its organization.

SALE OF SEED

The sale of pure bred seeds has been one of the many lines of effort carried on by the Experiment Association. Nearly all of the pure bred seeds are grown in million bushel lots so that seedsmen and other parties desiring seeds can secure them in large quantities. Our growers are always willing to divide profits with the seedsmen so as to encourage the larger sales of the pure bred seeds. Our membership feel that they are in a broad work, and their desire is to be helpful to the farmer by furnishing him pure bred seeds at a normal price so that he will be amply rewarded for emphasizing the work of pure bred seeds upon his farm. Our chief aim in the association is to show conclusively to every farmer that he cannot afford to be without the pure bred seeds. The seed sales have consequently increased until now we find that seeds are shipped out to nearly all countries of the world. We have been somewhat handicapped during the past year in our sale of seeds to the European countries. These countries have been so engaged with their internal troubles that the sale of seeds has been greatly curtailed through the great struggle now going on. We predict, however, that as soon as this struggle is over there will be an enormous demand for the Wisconsin pedigreed seeds, and we hope our members will prepare to meet this great demand.

PURE BRED SEED INSPECTION

During the past four years special efforts have been put forth by the Experiment Association for the thorough cleaning of the pedigreed seeds grown on the various farms. This has necessitated a wide work, and has been successfully carried out by the active efforts of J. J. Garland and various secretaries of the county orders. Through their endeavors the chief parties growing these pure bred seeds in large quantities have been visited and their seeds carefully gone over before submitting the same for sale. Samples of seed have been brought to the station, and in many instances have been further examined by the State Seed Inspection

Service. The whole effort and endeavor of the Experiment Association is to put nothing upon the market but what is of a high grade character. In this great movement it has the hearty cooperation of each member of the association, and no member desires for a moment to put anything upon the market but what would meet with approval by the purchaser. The members of the association are gradually getting the proper machinery upon their farms so that seeds that are not free from weed seeds and contaminations are becoming a thing of the past. This has enabled the members to secure better prices for the seed and to encourage and set before the purchaser a grade of seed which he should strive to emulate. In order to do our best in seed work or live stock work it is always well for the grower and breeder to have an ideal to work to. Without this, improvement is an impossibility. We feel confident that the Experiment Association through its influence brought about by the wide dissemination of these pure bred seeds has been instrumental to a large extent in influencing pure bred boys and girls. This great work is very far-reaching, and has caused thousands of people to look upon the bright side of agriculture. Nothing is more detestable than a farmer year after year working with scrub stock and scrub seeds. It has a marked influence in making him a scrubby farmer.

FORMALDEHYDE TREATMENT FOR FARM SEEDS

I wish at this time to carefully caution all members of the association to see that all seed grains and seed potatoes are treated with the formaldehyde solution in order to prevent smut and scab. For seed oats and the covered smut of barley use one pint of formaldehyde to thirty-six gallons of water. Put the grains in sacks and submerge these sacks of grain for ten minutes. Empty on threshing floor and cover with canvas for at least two hours. This method eradicates every particle of smut. All smut spores are destroyed, which is exceedingly essential to prevent the grain becoming contaminated in future years. Many methods are advocated but none of these methods are so thoroughly effective as the submerging method. Where all smut is eradicated from the seed, unless the grain is then sown close to a neighboring field that is smutted, it would

remain free from smut for many years. If, however, only a trace of smut is left in the grains this will inoculate other plants to such an extent that treatment would have to be continued annually if the smut was kept down to a minimum.

Many of the members of the association are now growing potatoes, and it is just as essential to have the seed potatoes treated for the prevention of scab as it is for the prevention of smut in small grains. This treatment is also very simple. Use one pint of formaldehyde to thirty gallons of water. Put the whole potatoes in a sack and submerge them for two hours in this solution. After taking from the sack they can be taken out and dried. After dry they should be cut if desired for seed.

Formaldehyde solution does not lose its strength readily but can be used for several hours or even several days without greatly deteriorating. Each day add a little additional formaldehyde to the solution in order to keep strength at full standard. I trust that this very important thing will be closely observed by all members of the Experiment Association as a single member sending out smutty grains or scabby potatoes would ruin the reputation which it has taken so many years for the Experiment Association to build up.

EXHIBITION OF PURE BRED SEEDS

No one thing has brought the importance of pure bred seeds before the people in a broad way more than the exhibition of these pure bred seeds at county and state fairs. The individual members show at most of the county fairs, and have done a great work in making these fairs more of an educational character. The County Orders of the Experiment Association are organized so that nearly all exhibits now at the State Fair. There is nothing more commendable than the County Experiment Associations making a great display at our State Fair.

I wish at this time to also call the attention of the County Orders especially in the northern part of the state to displaying at the Northern State Fair as well as the regular State Fair at Milwaukee. Owing to the fact that these fairs are held on consecutive weeks it would be feasible to make the display at both fairs. The northern part of the state is

now going through rapid development, and anything that can be done to emphasize the importance of the pure bred seeds in northern Wisconsin will help very materially in settling up this exceedingly fine farm country. We have yet ten millions of acres of unsettled land in Wisconsin, and we feel that living in a state which has done such commendable work along agricultural lines as Wisconsin that it ought not to take a century to settle up these lands. If our settlement of these lands does not go on any faster than it has in past years it will take nearly a hundred years to put them under cultivation. In my estimation the development of northern Wisconsin should go on much more rapidly than it has in the past, and I am inclined to think that the Wisconsin Experiment Association should lend its full support in bringing about this rapid development so that cut over districts of northern Wisconsin will be yielding a great revenue to the state as well as being known as the country of happy homes.

I understand that there is one entire large county in the northern part of the state in which only two per cent of its lands is under cultivation, and ninety-eight per cent is yet undeveloped. Most of these lands are very productive, and it seems that if the merits of these counties were only thoroughly known that the land would be taken up and put into farms much more rapidly than it is at the present time. We call your attention to this matter at this time so that every one of the members of the association can become a booster for northern Wisconsin, as the southern part of the state will be benefited almost as largely as the northern part if this country is thoroughly developed.

The Wisconsin Experiment Association is known far and near as an association which has been instrumental in putting up some of the finest grain shows in our land. Wherever our association has competed against exhibits we have been the winners. I wish to commend members of the association upon the deep interest they have always manifested in their annual grain show. Without doubt during the past ten years we have put up a show that could not be rivaled any where in the United States or abroad. The special characteristic of our show is the fact that we show what can be accomplished through long years of patient breeding

work, and we set an example so that visitors can carry away a mind picture of that which is ideal of the various farm crops. I hope that this fine feature of our work will always continue, and the members of the association will show such a commendable interest in this work in the state.

NEW EXPERIMENTAL WORK. PROJECTS FOR 1917

We are at the present time planning very many new lines of effort for the coming year's work. Among these lines of effort we might mention the growing of spring and winter wheat; the wider dissemination of fall rye; the growing of soy beans for forage and seed; the broader dissemination of Sudan grass; the growing for hay, pasture and seed of sweet clover; the wider dissemination of the hardier varieties of alfalfa; the use of commercial fertilizers for the early maturity and better development of the pedigreed seeds; a more wide cooperation with our county agricultural advisers. We hope by these newer lines of effort and our continuous energies placed upon our older lines of effort in the way of growing and dissemination of corn and small grains that our work the coming year will be more interesting and instructive than ever before.

The secretary will aim to keep in touch with the various members of the Association as closely as possible and from time to time send out from the office a review of the work which has been performed, and new lines of endeavor which we are contemplating taking up.



HOMER A. MILLER.



CONRAD SCHOTTLE.



A. J. PHILLIPS.

In Memoriam

A. J. PHILIPS

The Wisconsin Experiment Association deeply grieves the loss of its honorary member, A. J. Philips, West Salem, Wis. Mr. Philips died at La Crosse Hospital March 22, after an illness of about three weeks, at the age of eighty-three. No member of the Association was more widely known or greatly beloved than Mr. Philips. For many years Mr. Philips made it a point to be present at the annual meetings of the Experiment Association, and rendered much valuable advice to the members of this organization.

Mr. Philips was a great lover of boys, and he was ever ready in encouraging boys along the lines of agriculture. He worked strenuously for the upbuilding of the Short Course in Agriculture, and through his advice to young men many came to our College and later became ardent members of the Wisconsin Experiment Association.

The writer was a particular friend of Mr. Philips and at this time desires to emphasize the fact that Mr. Philips stood for the better things in life. We certainly shall miss him, and the Experiment Association desires to extend to Mrs. Philips and family the sympathy of each member of the Association, and heartfelt thanks to him who has gone before for his splendid work with the young men of our state.

CONRAD SCHOTTLER

We regret deeply the passing away of our friend and member, Conrad Schottler, Rockfield (Washington County). Mr. Schottler was raised in the country where he grew to young manhood and helped make the farm home beautiful and productive. In order to properly fit himself for the vocation he was to follow he entered the University the fall of 1901, taking the Short Course in Agriculture, and completed the same the spring of 1903.

Mr. Schottler died at the St. Joseph Hospital, Milwaukee, December 26, after a short illness. He leaves a father, two sisters, and two brothers to mourn his loss.

Mr. Schottler always manifested a deep interest in the Wisconsin Experiment Association of which he was a devoted member ever since his graduation from the Short Course. He was deeply interested in the growing and dissemination of pure bred seeds, and has done a lasting work in banishing scrub grains from his section of the state.

The Experiment Association at this time desires to extend its heartfelt sympathy to all members of his family. In his death the Experiment Association loses one of its valued members.

HOMER A. MILLER

We members of the Experiment Association feel very keenly the loss from our ranks of a young and willing fellow worker just entering into the period of most active usefulness in life. It is with deep regret that we accept the will of Providence when it takes away one of our number who has served faithfully beside us with his shoulder to the wheel of progress.

Homer A. Miller was born April 30, 1891, in Utica, Wis. Being of an ambitious and industrious nature he took the short course at Madison to fit himself for his chosen vocation, agriculture. This he pursued until, in the summer of 1915, failing health necessitated his removing to a milder climate. He passed away at Morovia, Cal., Aug. 3, 1916.

The Wisconsin Agricultural Experiment Association extends its sincere sympathies to his sorrowing father, mother, and sister.

AGRICULTURE YESTERDAY AND TODAY

W. L. AMES.

There should be, and rubably is, appropriateness in all things. The present occasion seems to be the exception, in which the speaker, having had but the advantages of the common district school in the securing of an education, should attempt to entertain, and much less, instruct in any way in the midst of college culture and environment, as in the present event. His education, in the main, having been secured in the exacting school of observation and experience, and a lifetime spent upon the farm. The merest possible excuse for my appearing here at this time, on the subject assigned, might be found in the possibility that some of the college professors and instructors may never have lived on a farm.

I come to you as the representative of "The Real Farmer" definition of which phrase, from the lips of the speaker in a former address, was picked up by several farm papers, and by at least one college professor, and after being favorably commented upon, was freely reproduced. The definition of "The Real Farmer" ran somewhat as follows:

"And who is this Real Farmer? The man who farms, simply to see how many dollars he can get out of his year's labors? Not for moment. That is all too narrow a conception of the Real Farmer. Rather, the farmer to whom farm life and farm surroundings constitute the ideal of human happiness. The farmer who knows as well, how many children he has as how many cattle and hogs, and who, as well as caring for his stock, prepares and maintains an up-to-date home for his wife and children; the farmer to whom it is as great a pleasure to find in his rambles afield a baby calf, colt, lamb, or litter of pigs, with attendant manifest maternal affection, as it is to grasp the price of a fatted steer. The farmer who finds satisfaction in binding up a broken leg and oftentimes succeeds when the veterinary said, 'Oh, shoot it; setting will never succeed.' The farmer to whom every horse, creature, dog, cat and even the diminutive bantams look to, and justly so, as a friend. The farmer who finds pleasure in the realization that a great part of his mission is to feed the world—the this type alone constitutes the Real Farmer."

While intent upon keeping close to my text, I am, nevertheless, permitted by your secretary, the party who invited me here, to occasionally step aside at appropriate time and place to explore an inviting glen or crevices or peer behind

rock or tree for possible hidden gems, for comparatively few most precious gems are picked up direct by the roadside.

My text considers agriculture yesterday and today. It is said in the history of histories that to the Creator of all things "A thousand years is as but a day." While we would attempt to draw no comparison between such Creator and poor weak humanity, yet, as we think back to childhood and other events connected therewith, they seem to us as but of yesterday. Hence in the "Yesterday of Agriculture" we may go back to fifty years and beyond.

To do this, for I shall speak mainly from observation, I shall necessarily give my age away. But even in doing that, my only cause for blushing will be that I know so little.

EARLY DAYS

I first saw the light of day in a little log house about a mile from where we now live, a mile or so south of the village of Oregon, and nearly sixty years ago.

Among my most vivid recollections were the winters.

The little log house had a semblance of a chamber in which we children slept. My dear old mother used to come up and look us all over the last thing before she retired and give us a final tucking in, and also give us the final enjoiner, "Now lie still, so as not to get the clothes off." The roof, within easy reach of our hands as we lay in bed, consisted simply of rough sawed oak roof boards, with edges untrimmed, and oak shaved shingles. The roof boards as far apart, and the shingles laid as long to the weather as the law would allow; and many a night, after mother Ames had left us, old mother Nature would come blustering along, and through the necessarily more or less open roof, give us an extra covering of snow, oftentimes to the depth of a couple of inches or more during the night. And later, as I grew to studying geography, I could again lie in bed and decipher just over my head, and on the rain-stained oak roof boards, clearly outlined maps of every country under the sun. The youngest of the family, of course, slept in the trundle bed, near father and mother, and which bed in daytime easily trundled under their bed. For a time, one or two corners of the one room served for grain bins.

The home eighty cost \$1.25 an acre. A heifer and two steers were the first live stock acquired. And for these, snow was melted over the little box stove in winter for their drink; as we were remote from surface water, and no money yet with which to dig a well. A small log hovel sheltered them.

In time, a few sheep, the fleeces of which went direct, to prepare our clothing. Finally, a hog or two for meat, and it began to look as though we were actually beginning to live. Pancakes frequently for breakfast, but it was unwritten law that we must eat the first two, at least, without molasses trimmings. Whale oil, or tallow candles, constituted our lighting system, and even then, one jet must suffice. A perforated tin lantern served for the barn chores. An occasional near-by howl of a wolf, and the blithesome notes of the owl, cheered the night hours, in winter; and in summer, skunks and coons kept things lively among the chickens.

EATABLES, CLOTHINGS AND WAGES

Potatoes, pork—at \$2.50 per hundred, dressed—bread, butter and crust coffee constituted the chief items of diet.

While father was splitting rails at fifty cents a hundred, or working by the day when he could find such work, at the same wage, 50 cents a day, mother was preparing meals for the seven of us in the family, cutting out every garment from the cloth, negotiating every stitch of them by hand, watching the two or three head of cattle to keep them from straying too far, doing up the bruised bare feet and toes that were everlastingly coming in contact with something more stubborn than they were, knitting every sock, stocking and mitten used by the family, and lastly, trying to help care for the ever arriving babies, and the possible sick in the neighborhood. Ah! *Ever good* neighbors, *then* and *yet*, they have *improved* every year in the fifty intervening, till today, I am *certain* that I live in the *best* neighborhood that the sun ever shone upon, and my *nearest* neighbor is my *best*.

FIRST TEAM AND VEHICLE

In time steers were broken, and with a home-made yoke, a smith-forged chain, and a tree crotch, behold, we had

blossomed out with an actual team and vehicle, and for that day, let me *tell you*, "we were going some." And with these conveniences, and with this extreme equipment, we can and must speed up a little, else we will never get to the agriculture of today.

But then, that will be no great loss to you, for you *see* and know the agriculture of today. It is the narrative of fifty to sixty years ago with which you are not familiar, and in which it is my present mission, so far as possible, to interest you.

PRIMITIVE TOOLS

A grindstone must be had. An ingenious neighbor worked one, after a fashion, out of a native sandstone slab. This for a time served the neighborhood. Wooden toothed drags hetched in the first acre or two of small grain sowed. If the fire in the little box stove accidentally went out, someone had to go to the neighbor's to borrow a live ember to again start it.

Before any of the oak openings could be depended upon for hay (for the small cleared patches must be put to grain), marshes were the dependence for winter hay, and the scythe, hand rake and fork, the harvesting tools. I was too young to wield the scythe, but not too young to spread after the scythe, and later to gather with the hand rake.

The grain cradle was the exclusive tool for cutting grain, which was in turn raked into bundles and bound with straw, by hand.

Finally the McCormick reaper was invented, and what a step forward we all considered it.

ORIGIN OF WISCONSIN DAIRYING

But let us go back just a minute to the old log house, that we may consider the origin of Wisconsin's dairy industry.

The one cow increased, in time, to perhaps five or six.

Father, having come to Wisconsin from Oneida county, N. Y., a dairy territory, knew something of the value of bran for dairy cows. A little inquiry concerning local waterpower flour mills, revealed the report that they were dumping their bran that they could not otherwise dispose



Prize winning sheaf grains at Annual Grain Show.



Grand champion ten ear exhibit of corn at the Association's Annual Grain Show, 1917. Grown by T. R. Thorpe, Tavera.

of into the river. He casually sidled up to such millers and finally agreed to pay them four or five dollars a ton for what bran he could use.

In the care of milk, I think that it must have been considered that the milk needed warmth, or a slow cooling for best cream results; for I well remember of father's nailing boards on the under side of the chamber floor stringers, and as closely over the little box stove as possible, on which to set the shallow pans of milk, gravity then being the only principle known for separating cream from milk.

Of course there was the more or less open chamber floor just over the open pans, and the daily sweeping of floors and consequent dust under the pans as they sat there for two or three days, but as there were no inspectors in those days, and people continued as well and able to toil as today, no one objected.

The cream was finally churned at irregular intervals, in the old dash churn (and the labor connected with that old churn frequently fell to me), and how I hated that old dash churn. The butter was finally sold here and there at 12 cents a pound.

Eggs at the same time sold at five cents a dozen.

FLAIL, TO FINAL POWER SEPARATOR

I well remember the use of the flail, and especially for separating beans and buckwheat, and, in a pinch, grain.

But finally, quite a specimen of a grain separator appeared, driven by a tread power on which the two, and finally three horses trod and trod, never progressing, but instead generating a driving power, and this power attached to the separator simply scratched the grain loose from the straw and thrust both straw and grain out of the rear of the machine there to be further raked and in a most crude way, partially separated. The grain and chaff were further separated by means of the wind.

Another type, mounted on wagon wheels, would take on a few bundles right in the field, and travel over the field, and from the action of its supporting wheels obtain a motion to propel its simple machinery.

The Pitts separator and eight or ten horse sweep power finally came, and we said, "It is finished. It will never be

superseded." The threshed grain was caught in half bushels, and each half bushel tallied by sticking a pin in a perforated board by the side of the machine handy to the man who attended the half bushels; and the grain, in majority of cases, dumped into a near-by rail crib with *crevices* between rails chinked with straw. When the auto-tally came we said, "What great invention next?"

The straw carrier was at first rigidly supported by two poles. It was later startlingly improved by rope and crank supports, allowing it at first to deliver near the ground, and as straw stack grew, to be gradually raised. The carrier was driven by a chain running over a pulley at top of the carrier, quite easily displaced by the straw stack men, thus causing a stop if they desired a rest.

The straw bands had to be cut (and incidentally occasionally the feeder's hand) and if the machine could take what could be presented from one side it was doing a land office business, and would be heralded throughout the land.

From this primitive beginning has evolved the steam-driven, self-feeding, swing-stacker, grain-weighing, self-dumping machine of today.

All small grain was sown by hand in early days the same as in Bible times.

Corn planting, at first, consisted of marking the ground both ways, dropping exactly four kernels by hand in each cross mark, and then covered by hand with the hoe. Many is the day I have thus dropped corn. This method was greatly improved upon the advent of the hand planter, delivering the seed, at least, in moist earth, if such existed, within a couple of inches of the surface. All of this is now supplanted by the horse-drawn planter which drops by the almost intelligent check wire in rows both ways.

The knotter, that on all grain and corn binders automatically ties the twine knot, unattended by human hands, and so instantaneously that in the ordinary running of the binder the human eye cannot detect its revolution and motion, must, to date, stand among the foremost of modern inventions.

The wood-tooth harrow hetched in the grain fifty years ago.

The ox team; A, or square drag; self-rake reaper, or dropper; and the sowing of grain by hand, continued freely up to twenty-five years ago.

At fifty years ago and beyond, a 25-cent postage prevailed, payable by the receiver of the letter.

In my first memory of the university, in the midst of which we convene today, it consisted of three buildings: present Main, and the two nearest in front of it, then used for dormitory purposes only. All class and recitation work in Main building. Today the buildings list up to sixty-three.

The foregoing were the days of the simple life.

MODERNIZING

After the old log house had sheltered the family twenty-five years, or until 1870, we built and moved into a new house, with fifteen times the space in it that the old house had, thus emphasizing one of humanity's greatest weaknesses, viz., from one extreme to another.

In our case, however, the smallness of the log house was compulsory. It was as large as our parents, landing here with less than \$100, had the wherewithal to build. But to them it was a mansion, for it *was* a *home*, and of their own.

The latter extreme was voluntary, and an exhibition of poor judgment. I would do its authors injustice, however, if I did not mellow harsh judgment with the belief that they considered that they were building for the entire family and for a lifetime. Again, what a fallacy. One after another of the five children trod the same matrimonial paths that father and mother had trod, and each founded a new and creditable home of his own, the speaker and family alone being left on the old home farm. This family, however, includes the remaining aged father.

But to go back to the new house.

An organ, music lessons, sewing machine, and some away-from-home schooling was indulged in. The ox team eliminated. Surplus horses raised and sold. Up-to-date machinery introduced. Pleasure and light business vehicles acquired. A fairly well-equipped farm office developed. Farm stock much improved by the use of improved sires, and some pure breds bought. Fences renewed. Stones and all stumps on land removed; and with land at \$25.00

an acre, the farm was much enlarged. Furnace heat introduced. Complete bathroom fixtures in house and barn basement; running water and telephone installed. And lastly, the largest of all preserving cans, the silo, provided.

LOOKING BACKWARD

From this greatly altered condition in human existence, although so altered by degrees that we can scarcely comprehend the change, we are tempted, and in this evening's service, justified to look back over the fifty odd intervening years, and taking brief stock of what, in a progressive nature, *has* happened; not only in agriculture, but in the world's business as well. Failing to occasionally make this review, we become so used to the remarkable progress of the present century that we shall utterly fail to appreciate the unspeakable advantages that we enjoy and unconsciously participate in.

I was startled, and I am certain that you will be, at the list of fifty or more comparisons from "Then" to "Now," which, as I meditated, came flooding to my mind, and which list I shall very briefly outline. And this list is only a starter.

They that have been permitted to live and observe for the past fifty years, have seen more progress, many times over, than all of the previous generations combined, since the beginning of the Christian era. Hand sowing of grain, of fifty years ago, was the same as in Bible times. Nothing but the hand sickle preceded the scythe and cradle for cutting grass and grain. Treading grain out of the straw with oxen only had preceded the flail; water navigation and the stage the only previous means of public conveyance.

THENS AND NOWS

Borrowing fire, when kitchen fire went out, then. Matches, now.

Five cent eggs, then. Forty cent eggs, now.

Eat-it-all-up-or-go-to-waste, then. Cold storage preservation, now.

Quiltings, the women's neighborhood event, then. Cinch, bridge and 500, now.

More produce than could be consumed, then. More consumed than can be produced, now.

Dry-cured fodders, only, then. Canned, by siloing, now.

All hay hand-pitched, then. Horse loaded and horse forked, now.

Rollicking families of children, then. Not always, but too often, a lap-dog, now.

Good story books satisfied, then. Nothing short of the movies, now.

Quill and ink well, then. Fountain pen and typewriter, now.

Debt paying by wheat, rail-splitting, or other labor, then. By bank check now.

The old oaken bucket, then. Windmill and gasoline engine, now.

Mitts scarcely afforded in January, then. Gloves in August, now.

Rail fences, only, then. Woven wire, now.

Cows, \$12.00 a head, then. \$100.00 a head, now.

Plow-handle and hoe education, then. Agricultural College education, now.

The fiddle and accordeon, then. Victrola, piano-player, and phonograph, now.

Chinch bugs and potato bugs, then. Humbugs, now.

Mixed and mongrel hog breeding, then. The highly developed road-hog, now.

Letter only communication, then. Telephone, telegraph and wireless the news messengers of today.

New York to Chicago nine days, then. Nineteen hours, now.

Can you, at a glance, comprehend the change? If so, your mind is much more fleet than mine.

PURE BRED SEED FOR SOUTH DAKOTA

ALFRED WENZ, Aberdeen, South Dakota.

We admit that the man who makes two blades of grass grow where one grew before is a public benefactor. But I should like to call your attention to the man who not only makes two ears of corn grow where none grew before, but who also makes a good ear of corn grow where none grew before. Does that not describe the work of your Wisconsin Experiment Association and the splendid Agricultural College which is back of it? Corn, even mongrel corn, is a valuable crop to raise, but you men want not only corn, but the very best corn that the skill and investigations of the scientist can give you. Not only that, but you are leagued in the work of getting this corn widely scattered that all may share in its benefit.

And we are sharing, out in South Dakota. For years I have been getting the benefits of the Golden Glow corn both in the crib and in the silo. Many others are as well—in the southern part of the Dakota Empire we find the Golden Glow giving rich results.

The Dakotas and Montana are sending you alfalfa seed. And you are returning us good corn and barley. That is a fair trade, with both parties making by it and neither one beating the other. Let us keep right on trading. As fast as you develop something choice, count us on your waiting list.

THE FARM LOAN BOARD

H. A. MOEHLENPAH, Clinton.

It is evident that the Federal Farm Loan Act was passed because of a real need and it ought not to be called in any sense a political measure. It had practically the unanimous endorsement of all political parties and when it was finally passed in Congress there was little opposition.

This is indicative of a need that existed in many sections of our country. It is also true that the economic conditions prevailing, not only in this country but the world over, demanded that our government interest themselves in so fundamental a proposition as the feeding of the people.

The growing and continuous demand for all food products and the cost of same, together with the facts existing as to the cultivation of the soil and the products therefrom, and the condition of the live stock industry, would warrant any government proceeding along reasonable lines in times of peace.

The conditions prevailing abroad under the war would warrant this country taking a lead to increase rapidly and quickly the live stock industry as well as all crops. A world need now exists in fact.

The labor problem incident to the war in Europe has accentuated and increased the urban problem here so that now it is out of balance more than at any time in the history of the world.

Credit has been termed the "Life blood of the nation." To increase the productivity of the soil, reduce the urban population, and to increase the happiness and contentment of our people in addition to caring for the increased emigration and settlement of our new citizens, there must be immediate increase in volume of money, machinery, and labor.

These are some of the fundamental reasons why our government has undertaken to do what the other countries have long since been doing, namely: provide adequate credit



FARMS ON WHICH CREDIT IS A NECESSITY

The money on these new barns, on Rusk County farms, was obtained from the First Land Mortgage Association.

facilities for tillers of the soil, organizing them so that it may be obtained at all times at reasonable rates.

The Federal Farm Loan Act provides a reservoir of credit for the farmer and all his interests in much the same manner that the Federal Reserve System provides credit for the business men of our country.

Some sections will use it more than others, but, in the main I firmly believe that rates of interest will be lowered to the farmer, his business will generally become more uniform, and all his activities increased. This is very much to be desired.

If we increase the products of the soil and provide for a larger cooperation among farmers their business will be stabilized.

The law is designed to bring this about. The twelve banks stationed in various sections of the country will make it more convenient for the farmer to secure needed credit and prompt service.

Great criticism has sprung up all over the country in the matter of rates for procuring credit, etc., etc. This is due largely to the fact that the farmer is isolated, he does not have the same recourse to money as compared with the business man.

It is clearly a function of the government to assist its citizens in this matter as in the Federal Commerce System or as the State of Wisconsin in the Railroad Rate Commission in all their operations.

Time and experience will no doubt show the defects in the law and amendments will be made from time to time.



Boys' Course in Oneida County.



Education which leads country children to appreciate the opportunities on the farm.

PRACTICAL AGRICULTURE IN SECONDARY SCHOOLS

F. J. SIEVERS, Milwaukee County School of Agriculture

We know that our farmer today is not only much more prosperous than he was years ago, but he is also happier and more prosperous than any other artisan. In spite of all this evidence, we find that the boys and girls are still continuing to leave the farm to enter fields where the opportunities are not nearly as gratifying. Let any young man who has left the farm and has been successful in a city occupation (and these farm boys are nearly all successful) just stop for a moment and analyze the situation and he will find, I am sure, that it was the ambition of practically every energetic boy or girl of his age to leave the farm at the time when he left it. It takes this same person less than eight or ten years of city life to help him decide that he made a wrong move.

If this is the case, is it not conclusive evidence that there is something wrong with the rural educational system that is supposed to instruct our country boys and girls, and does it in such a way that a discount is placed on the most profitable occupation that these individuals can enter into? In other words, they do not learn to know their opportunities until after they have left school and have been taught them by their own experiences.

It seems to me that our secondary educational institutions, and here I am referring particularly to the rural district schools and the high schools, deserve considerable criticism for not making a stronger attempt to educate the people in their community to fill their best place in the commercial world. In other words, if we know, as we should (if government statistics are worthy of consideration), that there is a shortage of agricultural workers to such an extent that it becomes a national problem, is it not the business of our secondary educational institutions to solve this problem by pointing out these opportunities to the younger generation instead of hammering away on some antiquated

course of study just because it permits itself to be easily followed by our educators?

Some of the factors that have been instrumental in bringing about this unbalanced condition of society, where we have too large a population in our city and too low a population in our rural communities, are as follows:

First—A successful teacher, be he either man or woman, will impress his own standards so decidedly upon the class that that standard becomes the standard of every one of the pupils. At the present time very few of our country school teachers, and this applies to the high school teachers as well, are products of the rural communities and, therefore, are not in sympathy with agricultural work. On the contrary they are not only out of sympathy with the leading industrial occupation in this country, but they have many times chosen a professional future for themselves which will take them away from anything that is closely allied to agriculture. This has a direct effect on the individual pupil in that he or she soon decides that an occupation that does not permit the wearing of a linen collar every day in the week, as well as on Sundays, is not dignified enough for the pupil's consideration.

Second—The course of study in our rural secondary schools is such that very little emphasis is placed on agriculture. Instead of making it the center around which all other subjects should revolve, it is oftentimes made a side issue. First, for the reason that it is a practical subject and, therefore is hard to teach, and second, because the teacher is many times very poorly informed on the subject and naturally takes the course of least resistance, which is in the direction of subjects with which he is more conversant and which allow themselves to be woven into the daily routine with the least inconvenience.

In conclusion, let me say that our agricultural work in the secondary schools has lost out in several places, viz.:

It has been presented in a lukewarm fashion, just because it was required.

It has been presented by individuals who could not show up the practical phase of the work advantageously, even if they had so desired.

CURING AND MARKETING SEED CORN

A. L. THOMPSON, Blair.

One of the most essential factors influencing the yield of corn is the curing of the seed. This is such a simple operation that no farmer can afford to neglect it. Our fathers and grandfathers used to hang their seed corn on the south side of a building, on the windmill frame, or even on the clothes line so that the sun could bake and bleach it until it was dry. And they tell us they never had any trouble about poor stands in their corn field. No doubt they had a fairly good stand from year to year, because they raised only a scrubby shallow-kerneled, low-yielding flint corn which matured early and dried out quickly before cold weather set in.

But during the last ten or twelve years tremendous improvements have been made in the quality and yield of corn through selection and breeding and the introduction of the dent varieties. These larger types require a longer time before maturing and more careful methods in curing of the seed. In fact, these improvements have brought about a condition which makes the curing of seed corn by artificial heat in our Wisconsin climate a necessity. Yet we find any number of farmers who today follow these old methods of curing their seed corn and as a result they secure poor stands and low yields.

The curing of our seed corn should begin in the field before the corn is picked. If the corn is allowed to mature thoroughly before picking the seed, it will contain less moisture and hence greatly help in the curing. Furthermore mature seed corn will have more vitality and weight than corn that is picked early. For this reason we would rather run chances with a light frost—which by the way does no damage to the vitality of the seed—then to pick it early and get weak seed and a great shrinkage.

As soon as the seed is picked it should be put in the room or place where it is to be cured. Now, as I have already mentioned, the successful seed man of today no longer recommends the sun-drying of the seed corn. Direct sunlight has an injurious effect on the germination of the seed corn, and it also bleaches the color so that it will not be



The "good, old fashioned way" of curing seed corn on the south side of the barn.



Seed curing house of A. L. Thompson, Blair. Experience has convinced corn growers of the great value of carefully cured seed.

true to type; but he cures his seed in a well-ventilated place where some artificial heat can be had.

On our Wisconsin farms there are no better places than the kitchen, attic or the furnace room for curing of small amounts. There are a number of simple devices which are all good for holding the corn. One simple and practical method is by using double strands of binder twine lacing the ears securely. The one objection to this method is that it takes two men to do the job. A simpler method is to begin at the top where the twine is suspended and gradually work downward giving one turn of the twine and a twist of the ear until you get to the end of the string and then tie the last ear. If the twine is turned about the ear nearer the butt end, the string will not unwind and cause the corn to fall down. This has some advantages over the first method mentioned in that it takes only one man to do the work and it does not fall down again if disturbed. It is convenient because after the corn is taken down the string can be rolled up ready for the next season. And besides it requires much less twine than the double strand method.

Another device known as the "corn tree" is a very simple method. This can be made by driving finishing nails at proper spaces apart on all four sides of a two-by-four. The ears can be easily pushed on to these nails before the corn has dried.

The best device is undoubtedly the wire hangers. These can be made very cheaply from the electric welded woven fencing. By clipping the cross wires on each side of the horizontal wire, hangers of any desired lengths can be made. By bending the end of the horizontal strand it can be suspended from nails or wires on the rafters. Patent hangers similar to these are now on the market for a reasonable price.

It does not matter which of these devices you use but the two important factors to remember is steady moderate heat and ventilation. Free circulation of air is just as important as heat; because if the moist air is not removed by air circulation molds will develop and kill the germination power of the seed.

So then, the kitchen, attic or the furnace room are ideal places in which to cure enough seed corn for your own individual use. But if a large quantity of seed corn is to be cured by artificial heat, a "kiln house" is advisable. In

erecting or remodeling a building for such a purpose, three things should be remembered—ventilation, cheap heat, and convenience in hanging or handling the corn. The building should be provided with ventilating doors on all sides, which can be opened to allow a free circulation of air on warm dry days. The heating apparatus should be located under the corn so that an upward current of air is formed. This will expel the moisture in a very short time and greatly reduce the cost of heating. Too high a temperature is harmful to the corn, but a slow steady heat gives the best results. In our seed house we usually start the stove as soon as all the corn is hung and keep it up for three or four weeks, when it usually is thoroughly dried out and ready to pack. You can very readily tell when corn is dry by giving the ear a twist; if it does not give but feels as rigid and hard as bone, it is dry and contains less than ten per cent moisture. Corn in this condition will not be injured by low temperature if it is kept in a dry place where no air circulates.

Now in regard to conveniences in placing the seed in the houses for drying. Many people prefer to pile their corn on slats or wire floors above the heat. This certainly saves a lot of time and labor at the time of selecting, but unless the circulation is exceedingly good some of the corn is apt to mold; and if mice should get in, which they sometimes do, they will have a splendid nesting and breeding place in that heap of corn. Others use the rack system which is good but requires so much room. In our seed house we use the wire hangers which we made ourselves from the electric welded fencing. Although this is slower than these other methods mentioned we like them because a boy can easily place the ears on them and hang them up. They are convenient because they enable us to hang a large quantity of corn in a small space and yet secure free circulation around each ear. And when the corn is taken down they can be placed in a corner out of your way for packing and storing. So much for the curing of the corn for seed. Remember fire-drying of seed corn is so simple and cheap and always insures you a high germinating test—for these reasons you should not neglect it with your own seed nor to buy seed that has not been cured in that way.

Now just a word about marketing seed corn and I'll be through. If you can produce the "goods" you can always

find a market for it. And so it is with seed corn. Good Wisconsin seed corn has always been in demand and prospects are bright for it to continue to be in demand in the future.

The best medium of advertising that you can get is to be on the seed growers' list of our association. Have your seed inspected and if it gets by Mr. Garland or the other inspectors it is good enough for anybody. I cannot quote from experience in advertising through farm papers but I believe these mediums of advertising are very good. A simple way to sell your seed is to work up a home trade. That's what we have been trying to do the past two years and conditions peculiar to our vicinity have greatly helped us in this. Within the last three or four years the farmers in our vicinity have nearly all built silos and what little corn they raise goes mostly in the silo. Now silo filling and seed corn picking come at the same time and as a result most farmers are too busy to pick their own seed corn. For that reason they find it just as convenient to depend on some one else for their seed. The seed houses have been getting some of the trade, of course. At present we have the only seed corn curing house in our vicinity, and as I have already mentioned we have many customers who order their seed before the corn is picked. We have grown some corn for the seed houses but find now that the local demand will take care of all we can raise. It is more profitable to grow a smaller amount of extra choice seed than to pick a large amount of inferior ears. The higher price and better satisfied customers more than make up for the smaller amount. Never send out a bushel of seed unless you can guarantee a high germinating test. I know there are farmers throughout the state who disregard the State Seed Inspection Law which requires every farmer who sells seed to have a sample of that seed tested and examined by the State Seed Inspector before he can sell it, and it must have a tag bearing the test and purity as found by the State Inspector before it can be delivered. I have never as yet found a member of our association doing that but we have a right to demand it of others in order to protect ourselves.

In conclusion, therefore, let me say that if you select the very best of your corn for seed and fire dry it, you will be able to guarantee a high germination test, and you will always find a good demand for it.



Another old time favorite. Drying seed corn on the wind mill.



HOW CURING AFFECTS THE STAND

The seed was cured in three ways, in a furnace room, a tool shed, and on the south side of a barn. The difference in the stand would more than pay for the extra work.

REPORT ON ASSOCIATION'S COOPERATIVE EXPERIMENTAL WORK—1916

J. J. GARLAND.

SOY BEAN EXPERIMENTS

These experiments were directed towards the production of soy bean seed by the members of the association and the profitableness of growing this crop for seed purposes only.

Especially was the light soil or sandy regions to be noted as regards the growing of this crop owing to this soy bean plants power to resist drouth, its nitrogen gathering properties, and its forage value.

In 1915 soy bean seed was distributed to a few members with an object of having seed growers established who would be able to furnish seed to the increasing number of farmers who were inquiring for seed each year. A report of the first year's result are found in the Fourteenth Experiment Association Report.

In the spring of 1916 about 20 pounds of soy bean seed was furnished free to any member who would agree to plant the crop and leave it go for seed. Most of the requests were from the central part of the state where such a crop as soy beans is most needed. Practically no seed was sent out south of Dane county.

It was decided to try out the three varieties which have been most commonly grown in Wisconsin ever since soy beans were introduced.

Seed of the Ito San, a yellow bean, was sent 26 members. The Medium Early Green was sent 11. The Wisconsin Early Black was sent 17.

Through the courtesy of Senator La Follette and Senator Husting the U. S. Department of Agriculture sent 2 pounds of Black Eyebrow soy beans to some 80 members of the association.

To all the members receiving seed from the association, a card was sent entitling them to receive an artificial cul-

ture for inoculation from the U. S. Department of Plant Industry free of charge.

The growers were, about corn planting time, to plant the seed on one-third to one-half acre of land in rows so that it could be cultivated.

The season was very severe in many respects for the soy beans and it gave a good opportunity to test them under extremely dry and hot periods and then the season was late in starting in the spring with early frosts in the fall.

Fourteen out of the 17 growers of the Wisconsin Early Black were able to make a report on their crop. Most of the members receiving this variety are located in the northern part of the state where the season is particularly short.

5 report that variety fully matured before frost.

5 report that variety partly matured before frost.

3 report that variety was killed by frost.

As to whether an earlier variety was needed—

11 reported that it was early enough.

2 reported that earlier variety was needed.

Opinions were asked as to when the soy beans should be planted—

5 reports say at corn planting time.

3 reports before corn planting time.

4 reports after corn planting time.

On how the beans stood the dry season—

4 report good.

9 report fair.

No report poor.

Yields of seed for the 7 reporting averaged over 15 bu. per acre.

Eight of the 11 receiving Medium Early Green sent in reports. The growers receiving this variety were in the north central part of the state.

1 reported that variety matured before frost.

1 reported that variety partly matured before frost.

5 reported that variety was killed by frost.

As to whether an earlier variety was needed—

5 report that an earlier variety was needed.

4 reports that an earlier variety was not needed.

Opinions were asked as to when they should be planted.

4 reports say plant before corn planting time.

4 reports say plant at corn planting time.

No reports say plant after corn planting time.

On how the bean stood the dry season—

5 report good.

2 report fair.

1 reports poor.

Only one yield of seed was reported and that averaged 15 bu. per acre.

Twenty-one of the 26 receiving the Ito San Variety reported.

- 9 reported that the crop matured before frost.
- 5 reported the crop partly matured before frost.
- 7 reported the crop killed by frost.

As to whether an earlier variety was needed—

- 5 reported that it was needed.
- 13 reported that it was not needed.

Opinions as to when the soy beans should be planted—

- 6 reports say plant before corn planting time.
- 12 reports say plant at corn planting time.
- 2 reports say plant after corn planting time.

SWEET CLOVER EXPERIMENTS

The object of these experiments was to find how adaptable sweet clover was to Wisconsin conditions, particularly in regions of light and sandy soils, to learn the best methods of seeding and securing stands, to test out varieties of seeds, the need of inoculation, the effect of acidity and need of lime for the crop, and its yield and value as a forage crop.

The seed obtained from L. L. Olds Company was hulled white blossom Kansas grown. It was distributed free of charge in 5, 10 and 15 pound lots to any member who would promise to plant same and leave stand for two years.

5 pounds of seed was sent 71 members.

10 pounds of seed was sent 4 members.

15 pounds of seed was sent 7 members.

Three methods of sowing the crop were outlined, the member to choose the one convenient. Enough seed was sent members who could put in two or more methods of seeding; thus the distribution of the 10 and 15 pound lots.

All the members receiving seed except 16 were furnished with cards entitling them to receive from U. S. Dept. of Agr. enough culture to artificially inoculate the seed before planting.

The 16 members were sent seed which had already been inoculated with the U. S. culture. Six of the lots of seed sent out had culture applied to it at twice the advised rates, that is, 30 lbs. of seed was inoculated with enough culture for 60 lbs. The remaining 10 lbs. of seed were inoculated at the regular rate as per directions on bottles.

See list of members receiving seed for those marked as having inoculated seed.

An offer was also made the members to supply them with sweet clover seed at 20c per lb. or at cost, one hundred twenty-five pounds being sold.

Sixty-nine reports were received from experimenters on condition of sweet clover sown during 1915.

47 seeded with a spring grain as nurse crop.

15 seeded above without a nurse crop.

7 seeded on fall grains.

A total of fifty-six report having secured a stand and it lived throughout the summer. This can be divided up into 40 stands secured out of 47 sowing with spring grain as nurse crop.

13 stands secured out of 15 seedings without nurse crop.

3 stands secured out of 7 seedings or fall grains in spring.

Practically all the total failures were due to killing out by severe wind and sand storms which swept over central and sandy regions of the state last year, killing out all crops on the land.

The reasons given for poor stands or failures are as follows:

9 report wind storms and blowing sands.

17 report dry weather and cold spring responsible.

10 report acid soil hindered crop.

4 report lack of inoculation as a reason.

6 report that because of nurse crop stand was badly affected.

13 report weeds, grasses and acid clovers as troubling.

7 report no trouble in securing stand.

The very unfavorable weather conditions which existed last spring and summer are responsible for many poor stands and some failures with the sweet clover. The spring was very wet and cold in many localities and difficulty was found on that account.

Later on in the season the weather was extremely hot and dry and affected in many places the spring seedings of beginners. The reports indicate that the sweet clover suffered and growth was practically stopped during the hot period. This weather did not kill out the sweet clover but prevented more successful stands from being secured. Some 22 reports stated that the dry weather did not affect the growth very much.

Considering the effect of dry weather on stands in different type of soils the reports show that on:

Sand

11 reported no bad effect of dry weather.
11 reported bad effect of dry weather.

Clay

9 report no bad effect of dry weather.
20 report bad effect of dry weather.

Soil as an effect on stands.

Total 34 report nature of soil as sandy.
8 report soils as acid.
2 report it as not acid.
14 don't know if it is acid or not.
10 made no report as to acidity.
Total 33 report soils to be clay, loam, silt etc.
14 report soil as acid.
2 report it as not acid.
11 don't know if it is acid or not.
6 make no report as to acidity.

Grand total of 18 report stands secured where soil was reported as acid.

Nineteen report stands where conditions of acidity not known.

A series of tests plantings with hulled and unhulled white sweet clover are being made this spring. The seed is to be sown on the snow and the action of the weather as a factor in producing a better stand noted. The action of the freezing and thawing is said to cause the extremely hard seeds of the sweet clover to germinate more quickly when warm weather comes.

HIGHEST YIELDING EAR CONTEST

Last year, as in the two years previous, the members of the Association were invited to enter an individual ear in a row contest to determine which was capable of producing the highest yield. About forty ears of both Golden Glow and Silver King corn were entered. From each ear were planted duplicate rows where the conditions were equally favorable to each. At harvest time the yields from all the rows were carefully weighed and compared. The highest ten ears of each variety ranked as follows:

CONTEST WINNERS—GOLDEN GLOW CORN—EAR TO ROW TEST

Place	Row in field	Yield in lbs.	Grower
1	21	109.8	S. P. Markle, La Crosse
2	6	106	Theo. S. Ward, Ft Atkinson
3	9	105.4	J. J. Schelling, Racine
4	13	97.2	R. W. Ward, Ft. Atkinson
5	18	96.2	N. Raessler, Beloit
6	16	95.1	J. R. Thorpe, Tavera
7	19	92.2	A. Ochsner, Plain
8	20	90.2	J. Wielinga, Midway
9	10	85.5	Clarence Rhodes, Kansasville
10	4	84.7	R. H. Lang, Jefferson

CONTEST WINNERS—SILVER KING CORN—EAR TO ROW TEST

Place	Row in field	Yield in lbs.	Grower
1	16	116.1	S. P. Markle, La Crosse
2	12	107.3	A. N. Kelly, Mineral Point
3	17	100.8	Earl Palmer, Lake Geneva
4	6	99.6	Geo. Leonard, Jefferson
5	11	98.8	N. Raessler, Beloit
6	8	95.3	H. J. Block, Burlington
7	2	93.1	J. A. Brunker, Ridgeway
8	9	92.3	A. J. Emmert, Johnson Creek
9	14	90.8	A. Popp, Jefferson
10	5	88.8	J. E. Brunker, Ridgeway

The considerable differences in yield among even the ten highest yielding ears of each variety emphasizes the fact that the ability to distinguish good seed ears is an important aid in increasing the productiveness of our fields of corn.

SWEET CLOVER

WM. BUDLONG, Rockford, Ill.

The value of sweet clover consists in its use as pasture and ensilage rather than for hay or seed.

The seed crop is as uncertain as red clover, comparing one year with another. For hay, sweet clover is a first-class feed for both horses and cattle, but since the first cutting is harvested about June 1st, it is almost impossible to get it cured on account of rainy weather at that time.

When the stand of sweet clover is thick there is danger of seriously injuring the second growth by cutting either too low or too late, as the new shoots spring from the live branches on the side of the stalks that have not been smothered out by the dense growth of the foliage above.

Since sweet clover does not bloat stock, it is especially desirable as a pasture plant.

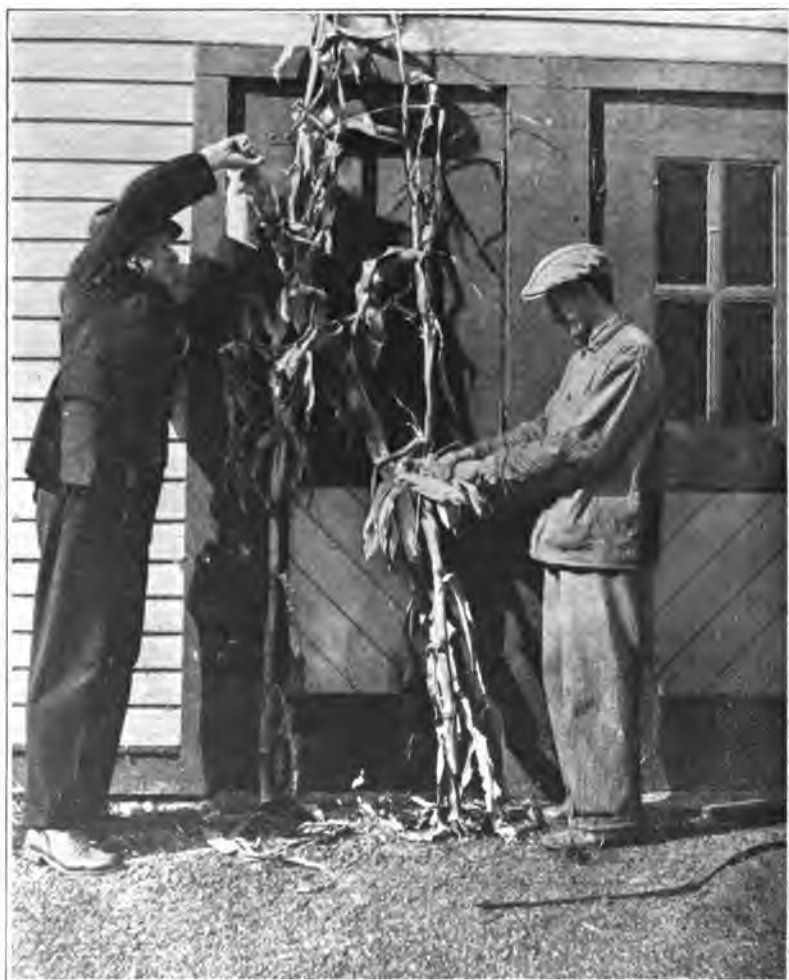
In chemical composition and feeding value, it is almost a balanced ration in itself, which is the reason all kinds of stock do so well on it.

It starts to grow in the spring even before June grass and it makes a very rapid and luxuriant growth during the entire spring and summer months. Each plant sends out in the spring from eight to thirteen stalks, and when the sweet clover is pastured and the ends are eaten off, five or six new branches will spring from the sides of each stalk thickening up the stand and making a fine quality of seed.

When sweet clover is sown in small grain in the spring it can be pastured with about two head of stock to the acre from September first to November fifteenth. In the spring of the second year, it will support from three to four head of steers an acre from the latter part of April until July first and even later.

Sweet clover should be pastured closely to keep the stalks from growing rank and woody.

Steers of about 1000 pounds will gain nearly three pounds a day on sweet clover pasture.



Variation in height of ears on stalks of one variety of corn. The corn breeder works for uniformity in this, as in other respects, by selection of seed from stalks showing desirable characteristics.

Sweet clover ensilage is coming to be used quite extensively in some parts of the country. It has been tried only about two years but these experiments have proven that it makes an excellent kind of feed.

Chemical analysis shows sweet clover ensilage to be practically a balanced ration, consisting of about 9% protein and 53% carbohydrates. This is about twice the feeding value of corn ensilage.

For ensilage purpose the sweet clover is pastured until about July first. It is then left to grow until the latter part of August. If a good seed crop has ripened, it is then cut for seed with a binder, shocked up, and in about a week threshed either by a threshing machine or clover huller. The straw is then run through an ensilage cutter into the silo and a two-inch stream of water is kept running continuously into the blower. Without an abundance of water the sweet clover ensilage would spoil.

In case there is not enough seed to pay to cut, the bundles are fed directly into the ensilage cutter.

When sweet clover is neither pastured or cut for hay in the spring, it sometimes grows so tall it cannot be readily handled with a binder. In that case it can be cut with a corn binder to good advantage.

For best results either the seed should be inoculated or inoculated soil strewn on the ground previous to sowing the sweet clover. Liming the soil is very beneficial when the land is acid.

The sweet clover roots penetrate the ground for a distance of three to four feet and feed on the raw mineral elements not reached by the ordinary shallow rooted farm crops such as corn and oats. By the use of these ordinarily unavailable mineral elements and the nitrogen it obtains from the air, sweet clover is enabled to make a rapid growth on soil too poor for the successful growth of other crops.

Sweet clover is one of the greatest fertilizing plants known. It has a number of characteristics not found in equal degree in any other plant. Some of them are, as follows: It will grow luxuriously on soil practically devoid of humus or vegetable matter, such as stony ground, eroded clay hills, practically pure sand land, hard compact gumbo land, land too alkaline for the successful growth of any

other crop. In such cases two years' growth of sweet clover will usually correct such alkalinity and make the land suitable for corn and grain.

It will grow on poor abandoned worn-out soils and build them up in a few years to a fertile condition. These soils are generally impoverished for the first six or eight inches only. The subsoil below is still rich in mineral elements which is used by the deep root system of sweet clover to make a rapid growth.

The Ontario Agricultural Experiment station found that one acre of green sweet clover plants, roots and all, weighed thirty tons. When such an amount of vegetable matter with a high protein content is returned to the soil, either as green mature crop or as a fertilizer after feeding to stock, it does not take long to bring the soil back to a fertile condition again.

Sweet clover will not grow successfully on a too acid soil. Such soils can be corrected by the addition of three to six tons of limestone per acre.

Sweet clover roots have the power to feed off of and dissolve insoluble mineral elements which is evident when it is found growing in the crevices of brick and stone, in old abandoned lime kilns, in stone quarries, and freshly opened sand pits.

Sweet clover has some advantages over alfalfa.

Sweet clover plants have from two to six times the nodules on their roots that alfalfa plants of the same size have, indicating that it has a greater power to draw nitrogen from the air than alfalfa.

Sweet clover will grow on impoverished land devoid of vegetable matter provided the land is not acid.

Alfalfa needs for its best growth not only an abundance of humus and decaying vegetation but also a good supply of mineral elements such as limestone, phosphorous, etc.

Sweet clover should be grown to bring the land into a fertile condition. Alfalfa should be grown only after the ground has been made fertile.

Sweet clover makes a good growth the Fall of its first year's seeding, and can be pastured or cut for hay without injuring it: Alfalfa makes little growth the first year and

cannot be cut or pastured after September first without injury.

Sweet clover will make a better growth on wet land than alfalfa, and will also withstand drought better. Being a biennial it fits into the ordinary rotation of farm crops better than alfalfa.

Sweet clover is recognized to be worth \$2.50 per acre as a honey plant, and some authorities claim it is worth \$25.00 per acre. Sweet clover honey is the equal of white clover honey in quality.

Sweet clover is the salvation of barren waste lands and abandoned farms.

Sweet clover does not winterkill or blight.

After sweet clover has grown in a field for two years, that land will generally produce about 15% larger yield of corn or grain than previously.

Corn grown on sweet clover ground will not only produce larger ears but the ears will mature about a week earlier than other corn grown in the same neighborhood. This is a great advantage in dry summers.

A. W. Hizer, of Rochelle, Illinois, in 1914 raised 76 bushels of corn per acre on 50 acres of sweet clover land which before had never yielded over 55 bushels of corn per acre.

Mr. John Tilton, of Rochelle, Illinois, in 1913 raised 75 bushels of corn per acre on land that had previously been in sweet clover. Fifty bushels of corn per acre was the most the land produced before.

Mr. J. M. Nealis, of Steward, Illinois, bought ninety-one head of steers November 16, 1915, in Kansas City. The average weight was 1008 lbs.

They were placed on a sweet clover pasture for a while, making a gain of nearly three pounds per day.

Mr. Nealis had 26 acres of sweet clover that he intended to cut for seed that year. It turned out to be a poor year for seed so he cut it with a binder and run it through a silo cutter into his silo, 16x40, filling it practically to the top and making about 180 tons of sweet clover ensilage. A two inch stream of water was kept running into the blower thoroughly saturating the sweet clover.

Mr. Nealis' corn in 1915 was soft, practically unsalable, showing a 40% moisture test. After the 91 steers were

taken off the sweet clover pasture they were fed this sweet clover ensilage and some soft corn on which they gained more than three pounds per day.

He sold some in about two months and some in about three months after they were bought. The selling price was over 2c per lb. over the purchase price, which, with the increase in gain per steer, made him a profit of \$38 per head, or a profit of \$3,458 on his sweet clover ensilage and soft corn. By utilizing his sweet clover and soft corn for feeding purposes, he transformed a practical failure in farm crops into a great success.

To illustrate the high value of sweet clover in making rapid gains on horses and cattle, I will relate the experience of a man in Iowa, who had four work horses that were quite thin from the summer's work. He asked the privilege of pasturing them in one of my sweet clover fields and did so, September 15, 1916.

In three week's time they had gained so rapidly in flesh that the hips were round and plump, whereas before they presented a shrunken appearance. They had received no grain or other feed during this time.

THE WORK OF THE COUNTY ORDER

P. W. JONES, Black River Falls.

When Professor Moore did me the honor of asking me to speak to you at this time, my reply was that I knew nothing about the subject of county order work except what had been learned from experience in our own county organization. He answered that a talk along this line would be acceptable, and so, like the preacher, I shall divide my talk into firstly, secondly, and thirdly—firstly taking up the things we have accomplished; secondly the things we failed to accomplish; and thirdly taking up our hopes for future accomplishment.

THINGS ACCOMPLISHED

Some three years ago, a pure bred seed train with R. A. Moore in charge made a stop at Black River Falls, our county seat. The time was evidently ripe for such a meeting as we had out a big crowd and much interest was aroused. Our dead county order was brought to life and it was my good fortune to be named as one of the officers. By hard work—at annual meeting time—I have hung onto office ever since. As we knew nothing about running a county order, we wrote Mr. Moore asking where we could get some ideas and he referred us to some “show ear” fellows in the north end of the state, saying that they were “live wires.” We wrote them and when the replies came we were convinced that our “wires” were of so much smaller size that they would be unable to stand up under such heavy currents. So we disregarded what the other fellows were doing and confined our efforts to things we felt capable of doing and that we knew would be of benefit to our agricultural conditions.

Our county has seven banks and for a long time all of them have been awake to the fact that their prosperity depends largely upon the prosperity of their farmer patrons. The two largest of these banks are located in Black River



Featuring Sandy Land Crops by means of which large areas of waste land can be made to produce.



Sweet clover along a railroad track. Sweet clover thrives where other plants succumb.

Falls and their cashiers have been especially active along lines of agricultural development. For this reason, the newly elected officers of the county order decided that it would be a good plan to make these two cashiers sort of an advisory committee and we did so—informally, of course. We have never made a move of importance without first consulting with them and their advice has been of great value in the work. They have been more than liberal with both their time and their money.

Before the visit of the seed train, very little pedigree grain was sown in our county. Within a few days, we pooled our orders and bought a carload of No. 1 and No. 5 oats for our members from one of the state's most prominent growers. The direct saving of this cooperative purchase was over a hundred dollars and the increased yield obtained from these improved varieties in the three crops raised since that time must be all of twenty-five thousand bushels. A second deal that was profitable was a seed corn purchase last spring. The frost of August 30, 1915, just about wiped out our production of both Golden Glow and Silver King corn and last spring most of our farmers were hard pressed to find suitable seed corn. We pooled the orders and bought about seventy bushels of 1914 grown corn—probably as good seed as was planted in Wisconsin last year. The cash saving on this cooperative purchase was again over a hundred dollars while the increased yield from the four hundred acres planted with this fine seed must have been fully three thousand bushels. But of still greater value is the large amount of high grade seed corn of these varieties that has been produced for our 1917 planting. The order has also been the means of *selling* considerable quantities of pedigree seed grains for members, both in and out of the county.

As was stated, the bankers have been of great help to the order and very fortunately we have been able to partially return their favors. After the county fair of 1915, one of the banks put on a very fine decorative display of farm products in the bank lobby and we were able to be of help in collecting and arranging the display. As a matter of fact, the greater part of the display was the *production* of members of the order. Last fall the other bank put on a fine

corn contest and again we were able to help them collect and arrange the samples. Most of the fourteen prizes awarded went to members of the order, the cup being taken by our president. His sample was sent to the St. Paul corn show last month and took the cup for our district comprised of a dozen or more counties.

A movement started by the order resulted in a purse of one hundred dollars being put up by our seven banks and the Fair Association for a children's corn contest at our 1915 county fair and we were in on a smaller purse for the same purpose the past year. At our annual meeting for 1915 in the courthouse, we gave prizes for pure bred grains and seed corn and had a very good display.

At our annual meeting in March last year Mr. Moore gave us a talk on the seed corn situation and in the evening he was our guest of honor at a banquet the order gave in our beautiful new hotel. In a talk at this banquet, one of our officers brought up the matter of a county agent for Jackson county. The seed then sown induced our banks to take up the matter and as a result of a splendid campaign by them, we are to have a county agent. We are of the opinion that this will prove the most profitable of all our "seed" deals.

After we had been running for about a year, a Vernon county farmer wrote that he would like to come up and tell us all about alfalfa. We sure needed to be told and as the Vernon county fellow claimed to know so much about it, we finally wrote him to come. He said that he would bring along another farmer from La Crosse county who would tell us what to do with the alfalfa after we had raised it according to his directions. He sent us some nice big posters advertising the meetings at different alfalfa fields throughout the county and we went ahead and made arrangements for automobiles and meals for the two farmers and their attendants. In three days there were ten meetings with practical talks illustrated by conditions in the field we happened to be on at the time and much good was done. The alfalfa man had along a moving picture machine and the third day we put on an evening meeting at a cross roads settlement. It was the fellow's first attempt at running the machine and he knew a whole lot less about it than he did about alfalfa. He

was slow about getting his picture machine started and still slower in stopping his talking machine, and when we finally *did* get him stopped we had to get his machine packed and catch a train ten miles away in about half an hour. The train whistled just as we pulled up to the depot a little before midnight and thus ended a strenuous three-days' trip.

Judicious advertising is something that will help advance the interests of the order. This part of the work has been a pleasure to me, particularly as I could write the advertisements and print them at the expense of someone else. I rather pride myself that we did some good work in this line and just as an *example* of good advertising and *not* with reference to anything that has been said, I want to read a portion of a handbill that we got out one time when Mr. Norgord and Mr. H. D. Griswold held a series of meetings in our county. After giving a list of the different meeting places, the bill goes on to tell of the speakers as follows: "The speakers will be C. P. Norgord, Superintendent of Farmer's Institutes, and H. D. Griswold, the successful dairyman of West Salem, a man with a state-wide reputation. Fully half of the fields selected for the meetings are on sandy soil and the good stands obtained will show that *alfalfa* is adapted to our lighter soils as well as the heavier. Jackson county was honored by Mr. Norgord as the first county in the state to be given the advantage of these field meets. He is an interesting speaker, a successful farmer, and a good fellow. If you already know him you will surely come, and if you do not know him you have been unlucky to that extent. It is a great satisfaction to the officers of The County Order to have a hand in giving Jackson county farmers a chance to hear such a man."

To drop the subject of advertising, there was a good joke on me in connection with the alfalfa meetings that you heard about before we took up the subject of advertising. When I was putting up the big posters that the Vernon county farmer sent to advertise his alfalfa meetings, one of my fellow farmers was standing in front of a store talking with the proprietor. I showed them the poster and asked permission of the storekeeper to hang one in his window. After I went inside the store the other farmer said to the store-

keeper, "What does Jones get out of that?" My friend, the business man, was unable to convince him that there was no rake-off in the affair for me. As a matter of fact, the three days chasing that Vernon county farmer gave me took off all of ten pounds of good flesh, and if you have paid close attention to the speakers during the week, you can figure pretty closely what that flesh cost to put back. Irritating incidents such as this look pretty small, however, when compared to the pleasure of the friendships formed in the work with such men as the Vernon county farmer, the secretary of the association, and with various other members of the station staff.

Just a few words in relation to our finances will be of interest. Since our reorganization we have collected about \$55.00 in dues and as we still have \$25.00 on hand, the work that we have done in three years has cost the members only about \$30.00. Most of this has been spent in advertising and for premiums. I cannot pass the question of advertising without expressing our appreciation of the generous treatment given us by our county papers, more particularly the two published in the county seat. For every dollar's worth of advertising that we have paid them for, they have cheerfully given us ten dollars worth of free space in their local columns.

THINGS NOT DONE

Now about our failures. None of us like to talk of our mistakes, and very naturally, this part will be short. We have failed to arouse much interest in better seed potatoes and in the discarding of the less desirable varieties. We have failed to get our membership where it ought to be in point of numbers. We have failed to get the membership and support of our business men as we should have. We have failed to convince the bulk of the farmers that they should expect to pay more than feed prices to their neighbor for choice pedigree seed grain. I confess to a mean enough disposition so that I have advised our members to *feed* their pedigree grains rather than to sell them to neighbors for seed at seed prices. On the other hand, it has always been our policy to *caution* members against asking *too* high prices

for seed and I am glad to say that I do not know of an instance where one of our members has even attempted it.

We tried a little cooperative newspaper advertising, the members being allowed to list only pure bred stock and seed and the order standing the expense. It was a flat failure and I could never see why—I wrote the ads myself. The failure that caused me more chagrin than all the others was our failure to get out good sized audiences to hear such talent as Mr. Norgord, Mr. Moore, and Miss Kelley of the home economics department. We also fell down something awful on an attempt to put on an acre soy bean contest. Through our efforts, our city advancement association agreed to give us fifty dollars for this purpose. At a creamery meeting where 135 farmers were present, I put the matter before them and said that I would see them after the meeting to arrange for seed. Just one fellow stayed, and he had formerly been a guest at the big institution belonging to the state just across Lake Mendota.

THINGS WE HOPE TO DO

Of course, we hope to turn some of our failures into success. With the coming of our county agent, we are looking for easy times as we can put on his shoulders most of the work we have been doing. It looks as though our biggest opportunity the next two years would be in helping him get started and in breaking down the prejudice there is in most communities against the system.

If you have followed me at all, I am sure that you will admit that some splendid work has been done in our county. Possibly you have felt from the repeated use of “we” and “I” that it was a case of altogether too much “I,” and if so, it will not take long to correct your mistaken impression. Of course, *someone* is entitled to the credit for the good work done, and the question arises, “Who?” Well, the officers admit that they are entitled to say five per cent of this credit, and that the membership is entitled to as much more. The banks and the newspapers are entitled to another five per cent, and still eighty per cent is not apportioned. Where does it belong? I’ll tell you, although I am sure that most of you have placed it before this. The bulk of the credit for the good done in our county belongs to the men higher

up—the officers and workers in the Wisconsin Agricultural Experiment Association and the Station staff. The “We” that you have been hearing about were simply the tools in their hands with which they accomplished the work. Without the pure bred grains developed by them and without the interest aroused through their efforts, “We” would have been able to accomplish but little, and more than likely we would have done nothing. Personally, I am sure that I appreciate what they have done, but it often seems as though their work was *not* fully appreciated. Every person in the state has been benefited by their work, either directly or indirectly. Do *you* appreciate it? If you do, why not show it now instead of waiting until they are laid away.

ALFALFA SESSION



It is the purpose of the Alfalfa Order to put alfalfa on the map in Wisconsin.

THE ALFALFA INDUSTRY

JAMES B. CHEESMAN, Racine.

The year 1916 has recorded several shocks to the agriculture of the world. With its ever ascending prices of all classes of merchandise, there has come an awakened sense to the basic principles of farm husbandry. No one is bold enough to predict his future status in the business world, but those who are in intimate touch with the foundation of all industry may well take counsel of each other, and ask a few practical questions on the duties which immediately concern the world's agriculture. The European war has taught many lessons, but none of such vital importance as that enforced by the time honored doctrine of Christianity that we are indeed our brother's keeper; and that the unit or community can prosper and ascend in the scale of being only as we practice the golden rule.

The most fruitful studies of community life and permanent well-being are those which have been rooted in radical principles approved by the ages. Older countries were ob-

servant enough to learn that any departure from these fundamentals must furnish their own corrective from experience. Today we are invited by the year 1916 to take stock, and to consider what are the basic rules which make for permanence and govern all prosperity. One of the greatest disturbing factors of the present day lies in uncertainty, and the resultant insecurity which is the inevitable outcome. We are fast approaching the time when the state will affirm that its primary function is to develop the highest type of manhood and that all its legislation and administrative functions shall be so shaped and controlled that the people may pursue industry on a plane of correct thinking and righteous practice.

The world cries out today for lower cost food and for merchandise of every description at prices dictated by the principles of economics and not by jerked, twisted and distorted markets which obliges everyone to guess about tomorrow and to wonder whether he will win or lose in the game of chance which too often characterises modern dealings. Primarily business is a divine equity and not a game, and whenever we permit our judgment to be warped by any other view of the subject we shall sooner or later be jolted and corrected.

In this country we are passing through a phase of experience which history records as the lot of all who have proved the true base of farm industry and contentment. Wherever we seek we find that the first condition of successful farming is security of tenure and permanent interest. It is a common experience that he who by the plow would thrive must operate the farm himself. It is certain that this country must follow in the wake of all others. What has happened in European countries which have attained a high degree of farm citizenship must follow here. When an owner gets tired and begins to think he can no longer work the farm he is too often handicapped by clinging to practice out of harmony with sound agriculture. To let the farm to a make-shift operator with a free hand is wasteful, and to lease it with the too common restrictions which often reduce crops and in any case retard the permanent well-being of the farm is disastrous. Many of the men who formulated schemes of land credits are asking themselves the question: how long will the state permit the present condition to continue?

The right of eminent domain which the state applies when railroads are necessary, or any other public improvement, has been applied to agriculture. In several countries in continental Europe this principle has been applied to agriculture. It has had a more sweeping application in Ireland. The day may come when a State Land Credit Commission may step in and dispossess owners who obstruct and retard farm development. In exchange for their property they will get land mortgage bonds equal to the value which a board of valuers place on it and so give place to rational farming and a betterment of country life.

The alfalfa grower is vitally affected by security of tenure and as the milk farms of the country are especially in need of alfalfa it is not helpful to the milk industry to obstruct and retard alfalfa growing because neither owner nor tenant can agree as to the primary investment. Alfalfa insists on being treated right from the start or success will be doubtful. Every year we are learning that the lowest cost seed is the one which has proved itself the hardiest. Then the most effective preparation of the land is to grow legumes one or more seasons before starting with alfalfa seeding. If liming can be practiced the year before that is a good way to sweeten soil and to give the alfalfa plant a chance to get a strong root developed. Whatever can be done a few years previous to planting will be a good assurance that the work has started right when you are ready to begin. Alfalfa on milk farms is of primary importance because it lowers cost. It is beyond compare for calf rearing and enables stockmen to bring heifers into profit at a lower cost than is the case when alfalfa is not available. Apart from any question of relative cost is the permanent fertility of the soil and its ability to produce with certainty and at a profit all those products which yield the largest amount of nutrition per acre, and yield the greatest net return per farm and county.

We are fast approaching a day when the county will be the agricultural unit of the state. The state will want to know what its people are doing, and the most practical way of maintaining a correct relation with the state is to work on a community plan, and coordinate all farm work that it may yield the greatest satisfaction to the producer, and render the highest service to the state. Why is this so? Just because

in all civilized communities there is a growing tendency to increase numbers and expand in faith, ambition, and all the higher tasks which discipline, and mold character.

As long as we love we serve, says Stevenson, and the very earliest lesson which we should learn is service. In serving we learn obedience and respect for others who have served that we might learn, and in turn be useful to the community. When we learn that the primary interest in human experience is the evolution and development of character, we shall think less of what the world owes us and more of our obligations to others. Those who have learned this lesson well have secured for themselves the largest return.

One of the commonest and most prolific subjects for thought in the present day is the "after the war" condition. The demands of a prolonged period of reconstruction offers every farmer the greatest opportunity of the century. We are called upon every year to feed a larger population, growing by leaps and bounds. The world is looking to us for live stock at a time when we are quite unable to supply ourselves. Surely no greater argument for alfalfa can be offered than this unprecedented condition. There is the need, here is the land, and here too are the greatest numbers of expectant and ambitious farmers.

During the past two years there has been accumulated in this country an enormous addition to our liquid wealth. Tens of thousands of farmers in every state need more capital. Few of our farms are capitalized to the point of business efficiency. If you can look over the recent reports of the Department of Farm Management you will be easily convinced of this fact. There are too many farms mismanaged because the work of general farming has not been laid out on a systematic plan of operation. A well planned farm scheme should cover a life experience or at least a period of years not less than ten. As a rule too large a proportion of farm capital is locked up in the land. It should be the aim of every county agriculturist to modify and correct this condition. We need a larger proportion of working capital. The proportion of liquid capital represented in tools, live stock and equipment materially governs the total volume of business done, and the rate of expense per dollar of business.

In this general presentation of first principles of farm economics I have endeavored to show in a general way what retards agricultural progress. These conditions are basic and demand our most careful and serious consideration. This offering has been suggested by the experience of 1916. In Wisconsin we are fortunate in having a most intimate relation between farmers and bankers. In fact I know of no other state quite so well equipped for a free circulation of capital for farm development. The farm mortgage bond must become more and more attractive to a large class of investors, and in proportion as farm capital increases, we shall have the strongest assurance of security of tenure, the larger will be our live stock interests, because the greatest alfalfa culture will prevail.

The question comes to each one of us "how can we advance the interest of the farm from now on?" Join the alfalfa growers, associate your work with the County Order, extend your organization, and coordinate the work of the farm with that of the community in all practical ways. Remember the individual citizen is the unit of state agriculture. It will readily be acknowledged that the Wisconsin Agricultural Experiment Association has done more for the Wisconsin farmer than tens of thousands of state farmers single handed and alone could ever have won for themselves. Without organization the unit is of little value. Combined units make good fellowship, and that spirit of common interest and singleness of aim makes all things possible which are righteous in character and beneficent in purpose and function.



(1) GRIMM

(2) COMMON MONTANA

Both of these plots were seeded at the same time and in the same way in June 1914. They were both excellent stands in 1915. But the winter 1915-16 killed out the common and when this photo was taken (June 1916) it was mostly weeds. The Grimm was not hurt. It lived through and gave a thick stand and a big yield. This is why we want you to try Grimm or Cossack or both to compare with the common.



PHOTO TAKEN APRIL 1916

The dark plots are the variegated varieties, Grimm, and Baltic. They have not winter-killed seriously. The light plots have hardly begun to grow and they are for the most part killed out. They were sown with seed of common purple flowered strains coming from Montana, Kansas, Nebraska and other western states.

SECRETARY'S REPORT AT FIFTH ANNUAL MEETING OF THE ALFALFA ORDER OF THE WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION

L. F. GRABER, Madison.

I am glad to report to you the past year's activities of your association at this our fifth annual meeting. We organized to cooperate in encouraging more alfalfa growing in Wisconsin. To accomplish this we have bent our energies along the lines of solving those problems which have heretofore limited our alfalfa area to about 35,000 acres. By your combined efforts we should soon double this acreage.

I predict that ten years hence Wisconsin will be growing no less than 500,000 acres of alfalfa. Why? Because we need it. Consider the thousands and thousands of dollars Wisconsin sends to other states for feed for our one and a half million dairy cows! High priced feed too! This year first grade alfalfa hay is costing our farmers from \$20.00 to \$25.00 a ton. Why not keep the money at home and grow our own feed? We have the soil. We have the climate. We have the organization. We have the right kind of farmers. And we have the two greatest feed producing crops in the world—corn and alfalfa. With this combination alfalfa is bound to find its way through the entanglements of prejudice, disinterest and misunderstanding.

The silo has come. Fifty-eight thousand of them. One for about every three or four farms. Now let's go after alfalfa and swell the present acreage up to at least 70,000 for next year. Surely we need it, and surely we can do it. If we are going to maintain our position as the leading dairy state, we have got to grow the biggest producing crops and for large yields of valuable feed you can't beat alfalfa. Wisconsin makes 60% of the nation's cheese. We have more dairy cows, more cheese factories, more creameries and more silos than any other state in the Union. Are we going to keep the lead? We will with alfalfa and corn silage as our principal crops. Stop and think a minute.

You can get three times as much feed from one acre of alfalfa as you can from one acre of timothy. Don't send hard earned dollars away for high priced feeds. Grow your own feed. *Grow alfalfa.*

SOME ALFALFA TROUBLE

Alfalfa enthusiasm received a setback last spring—not only in this state but in parts of Illinois, Indiana, Ohio and other states as well. What caused it? Winterkilling. Jack frost did the damage. Clover went too, and in some places winter wheat and rye. Winterkilling—its causes and its cures—these are things which will be entirely and completely discussed at this our fifth annual meeting.

If our state alfalfa growers' association—the Alfalfa Order—is going to stand back of those principles on which and for which it was organized, it behooves us to lend and direct our energies to the solution of those problems which are arising not only in getting alfalfa started but in keeping it permanently after we have once got it started.

MANY EXCELLENT FIELDS KILLED OUT

Last spring (1916) I received 322 reports from our members on the condition of their alfalfa fields which were seeded in 1914. Ninety-eight per cent of these growers had excellent stands in the fall of 1915. Here is what they stated:

One-half (50 per cent) had their good stands of 1915 entirely ruined by winterkilling. Twenty-one per cent reported partial winterkilling and 29 per cent reported no winterkilling.

This, in my mind, is very serious and it demands the immediate attention and action of our Association to prevent in as far as possible a similar occurrence. The value of the Alfalfa Order to the State of Wisconsin and to its individual members comes mainly from the cooperation of our farmers in solving these and other problems which are now limiting our alfalfa acreage.

What causes winterkilling? Is it extremely low temperatures? Is it too much snow? It is neither. Very cold winters do not necessarily bring on winterkilling. It's the open winter weather with but little snow to cover and pro-

tect the plants from the harm which comes by heaving and other injurious effects of alternate freezing and thawing. Especially on flat land, without sufficient slope to carry away the water from melting snow or rain, is winterkilling serious. If water accumulates and ice sheets form the plants beneath are very apt to be smothered out.

A very interesting experience has been reported regarding the injury which comes from ice sheets. I am told that Mr. H. C. Davis of Omro, Wisconsin, had a level field of alfalfa which was covered last spring with sheets of ice. It happened that a disk was left at one end of the field and it seems that Mr. Davis pulled the disk across the ice-bound field. In doing so the frozen crust was broken up considerably where the disk had been drawn. Late in the spring Mr. Davis was surprised to observe that the only part of his field which was not killed out was this one strip where he happened to have disked the ice! What is the explanation? The only one your secretary has to offer is that the accidental disking opened up the ice and provided entrance of air to the plants beneath. On the experiment station farm the ice sheets killed out the lower ends of some plots except along a narrow ridge which was just elevated or high enough not to be covered by the ice. Here the plants had air and were not smothered as was the case on either side of the ridge where the ice sheet extended.

That these climatic conditions—open winter weather with but little snow covering for protection against heaving from alternate freezing and thawing and the formation of smothering ice sheets—cause winterkilling is well illustrated by the fact that in northern Wisconsin where winters, as a rule, are most rigorous, very little killing of alfalfa and clover occurred in 1916 because of the abundant snow covering which prevailed until spring. In southern Wisconsin the winter temperatures were warmer but the winterkilling was very serious due to ice sheets and a lack of snow.

WHEN THE FARMER HIMSELF IS TO BLAME

I have little patience with those who complain about blue grass trouble and thinning out of alfalfa stands when they cut or pasture their fields late in the fall. Late fall cutting (after September 5) was particularly disastrous last

year to many good stands of alfalfa throughout the state. Several illustrations of the damage resulting from this unwise practice are available in the reports of the members to your secretary. With the unfavorable haying weather of the summer of 1915 the first and second crops of alfalfa were cut from one to three weeks later than the proper cutting stage. The third cutting was not then ready until about the first of October. With the poor corn crop and the consequent lack of feed the temptation to take a chance on cutting alfalfa at this late date was very pressing and it resulted in the ruination of many fields which would have otherwise withstood the unfavorable winter weather. Many of our members who cut a part of their fields late in the fall and left a part with the third crop uncut found that the only portion of their stands which winterkilled seriously was the late cut portion.

In certain years late fall cutting and even light pasturing in the fall does not seem to injure alfalfa very seriously but with open winters such as that of 1915-16 it is a very ruinous practice. Those who are desirous of maintaining good stands of alfalfa permanently and keeping the blue grass under control are taking too much risk in cutting alfalfa later than the first week in September.

LATE SEEDING FAILS

There is one golden rule in growing and maintaining a stand of alfalfa that can be always safely followed. I have named it the "eight inch rule." Alfalfa should have at least eight inches of growth before freezing weather occurs in the fall. It needs this amount of growth to hold the protecting snow and to withstand the rigors of winter. This not only means that the last cutting should be made early enough in the fall so that the succeeding growth will reach this height before the first severe frost of the fall but it also requires early enough seeding to have the alfalfa produce the eight inches of necessary growth. In the southern portion of the state seeding later than the first part of August is dangerous for winter protection. If drought occurs after late summer seeding the alfalfa plants do not obtain sufficient growth of the roots and stems to be strong enough to stand the winter and the field may either winterkill or it will be so

weakened that its growth the following spring will be slow, unsatisfactory and probably overrun with weeds and blue grass. Seeding after the first of August in southern Wisconsin is only successful where rainfall and favorable soil and weather conditions will result in eight inches of growth before freezing occurs. In northern Wisconsin seeding later than July 15th is very risky because there the fall growing season is somewhat shorter.

ALFALFAS THAT DO AND DON'T WINTERKILL

It still remains, however, that where every regulation regarding the proper treatment of alfalfa has been followed out it may winterkill. Not every year will alfalfa winterkill seriously but under certain climatic conditions serious damage may obtain. Where this occurs there is only one solution to the problem—use seed of the hardiest known varieties. It is an undoubted fact that there are varieties of alfalfa which stand the winters better than the common kind which comes from the alfalfa seed producing states of the West.

In June 1914 your secretary seeded sixteen separate plots with various strains of alfalfa seed coming from Kansas, Nebraska, Montana and the Dakotas. Excellent stands and yields were obtained in 1915. They were not cut late that fall and a growth of eleven inches resulted before freezing occurred. But last winter (1915-16) took its toll. Only four of these plots came through in excellent shape. The remaining twelve winterkilled from 41 to 78 per cent. In the several Dakota and Montana plots an average of 55 per cent of the plants were killed and these plots yielded only 3842 pounds of cured hay an acre in two cuttings. Two plots sown with Kansas and Nebraska grown seed winterkilled 52 per cent and yielded in two cuttings 4470 pounds of cured hay an acre. They were even slightly better than the more northern grown strains in this particular test. The four banner plots were seeded with seed of the variegated kinds of alfalfa—two with Grimm and two with Baltic. The average winterkilling for these four plots was only 27 per cent and because the remaining plants spread out so rapidly and so early in the spring this injury was not noticeable. They yielded an average of 6045 pounds of cured hay

an acre in two cuttings—a ton more than the common kinds which had been seeded under identically the same conditions. There is no doubt about it—the best kind of alfalfa for those sections where winterkilling is a serious problem are the variegated strains.

There are three principal variegated strains of alfalfa grown in the United States—Grimm, Baltic and Cossack. These are the hardiest, the longest lived and the best all around alfalfas for the farmer who has trouble with winter-killing.

In tests conducted so far there is no evidence to show that any one of these three strains is hardier or better in yields than the others. They seem to be about alike in their ability to live through hard winters. The Grimm, however, is the most widely grown in the seed producing sections of the West and it can be obtained at a much lower cost than the widely advertised Cossack. Although Baltic seed is scarce it sells at about the same price as the Grimm.

WHERE CAN RELIABLE VARIEGATED ALFALFA SEED BE OBTAINED?

It has been known for sometime that these variegated alfalfas were much hardier than the common alfalfa of the West, but they have commanded such a high price that it has been impractical for us to recommend them for general use in the state. Grimm alfalfa first came into prominence about 1904, when the Minnesota Station called attention to its superior merits. Immediately the price of this seed soared to \$1.00 a pound. The seed was scarce. The western grower could well afford to pay this price for Grimm seed because under arid conditions a light rate of seeding (from 5–10 lbs. per acre) could be used and after a stand was obtained a ready market for the seed was available at fancy prices double and treble the price he could secure for ordinary alfalfa seed. In Wisconsin and in all the humid states general seed production of alfalfa is practically a failure. We have too much rain. The strength of the plant produces stems and leaves and little seed sets. Consequently a dollar a pound for Grimm seed where 10 to 20 lbs. an acre was the best rate of seeding did not prove attractive or practical. If our farmers could have raised their own seed the initial cost of their first seed would not have been a serious matter

and our association would have urged its growth long ago.

Another drawback which has arisen in the past and which exists at this time is the difficulty of getting *genuine* Grimm, Baltic or Cossack seed. There is no way of distinguishing the seed of these strains from the common seed of the market. I am recently informed that so called Grimm seed is being retailed at 25 cents a pound. Is it the real Grimm? I don't know but from correspondence with about thirty western growers of this variety—their quotations will average at least double this figure. Fortunately the growers of Grimm, Baltic and Cossack alfalfa seed in various sections of the West are organizing seed selling associations and are offering the public certified seed in sealed sacks. Many of the adverse and disappointing reports we occasionally hear regarding Grimm alfalfa may be due to the use of seed which was not genuine.

At the present time Cossack alfalfa is being widely advertised at \$2.00 a pound. It is hardly necessary to state that our farmers are not generally warranted in using this seed until the price is reduced to a more reasonable figure. Especially is this true when the Grimm variety, which has so far proven to be just as good, can be obtained at around 40 to 50 cents a pound.

THE ALFALFA ORDER WILL TEST OUT GRIMM AND COSSACK

As per action taken at our previous meetings we have made arrangements for the cooperative purchase of Grimm and Cossack alfalfa seed for the members. The purpose of the Alfalfa Order in handling Grimm alfalfa is to establish several hundred experimental tests in all parts of the state comparing these variegated alfalfas with the common. We want our members to see for themselves their superior merits. In a few years, we believe, the Grimm and other variegated strains will be purchased for 10 or 15 cents a pound above the regular market price of common seed. Because it takes at least two years to make a fair comparative test of variegated and common alfalfa, we are anxious for several hundred of our members to get started this spring with at least ten or twenty pounds of Grimm or Cossack so that when this seed sells for a more reasonable figure than now obtains, they can determine the advisability of its purchase for themselves.

OLD SEEDINGS WINTERKILL MORE SERIOUSLY THAN NEW SEEDINGS

In order to avoid disappointment to those who may try out variegated alfalfa in comparison with common, your secretary wishes to emphasize that there may be but little difference in yields and general appearance the first year after seeding. It is only under unusually severe climatic conditions that the variegated (either Grimm, Cossack or Baltic) will demonstrate its superiority in a one year trial. We have sown plots with common Kansas and Nebraska grown alfalfa seed, costing 13 cents a pound, which after a hard winter were equal in every respect to plots of Grimm, Baltic and Cossack, where the seed cost several times as much. This was not true, however, following the second winter when the common killed out and the variegated came through in excellent shape. Common alfalfa seems to be less hardy after it becomes more than one year old. It will stand a severe winter in its first year's growth, but an equally severe winter will kill it out in its second year. I do not know why, but it is true. Here is an example—one of many that I could give.

Seven plots of common alfalfa were seeded in June, 1915. In each case an excellent stand obtained in the fall, which lived through the severe winter of 1915–1916 with only an average of 13 per cent winterkilling. Not one of these plots was perceptibly injured by this slight damage, and excellent yields were secured this summer. As previously reported, the two year old seedings of common alfalfa made in June 1914, which gave such excellent stands in 1915, killed out last winter (1915–1916) all the way from 41 per cent up to 78 per cent—the average for the eleven common strains being 55 per cent. A more specific case showing how much more susceptible to winterkilling old seedings of common alfalfa are than the new seedings is as follows:

On June 23, 1915, a plot of alfalfa was seeded with Montana seed in the same manner, under uniform soil condition, and with the same strain of seed (seed in both cases taken out of the same bag) as a similar plot not more than three rods distant which was sown on June 27, 1914. Both of these plots had excellent stands in the fall of 1915 but this spring the two year old plot had winterkilled 76 per cent while the new seeding only winterkilled 9 per cent. The

new plot yielded 1380 lbs. more hay in two cuttings. Just why old stands of alfalfa winterkill more seriously than new seedings is a problem not yet solved, but that it is a fact is substantiated by 165 reports from the members of the Alfalfa Order, 76 per cent of which declared that their old stands winterkilled much more badly than the new seedings of 1915.

The importance of this peculiar characteristic of alfalfa may be summed up as follows:

1. In comparing common and variegated alfalfa there may not be any difference in yields and hardiness until after the fields are one year old. We cannot draw conclusions on the hardiness of alfalfa in a one year test. It requires at least two winters for a fair test, and more if the second winter happens to be mild.

2. Farmers growing alfalfa in short three year rotations, as they do red clover, may find common alfalfa seed very satisfactory. The new seedings of common alfalfa are almost as hardy as the new or old seedings of variegated. The old seedings of common kill out badly with severe winters. Variegated alfalfas are the kind to grow where permanent stands are desired.

GIVE VARIEGATED ALFALFA A TRIAL

To be sure those who are not troubled with winterkilling will find the common alfalfa seed just as satisfactory as Grimm. Because common alfalfa is very hardy for the first winter those who grow alfalfa in short rotations, plowing under the third crop of the first or second year, will in all probability find the common entirely satisfactory. The Grimm and Cossack alfalfa are varieties to use where permanent stands are desired and where winterkilling gives trouble. I wish to impress those who try out these variegated alfalfas that all these strains require the same care and cultural practices in the way of time, of seeding, inoculation, lime, etc., as are necessary for success with common alfalfa. There may be but little difference in stand and appearance of Grimm or Cossack and common alfalfa the first year after seeding. Common purple flowered alfalfa is very hardy for the first winter if it has been seeded right. But after that, with severe open winters, the Grimm, Baltic and Cossack

will prove to be far superior in stand and yields and you will have less blue grass trouble.

A year ago we distributed 100 five-pound samples of Grimm alfalfa seed which were sown last spring. This year we hope to start at least five hundred tests on the same variety. Our association has maintained a healthy growth. At present we have a paid up membership of 1000. Each member who joins is supplied with litmus paper for testing soils and the latest information on the growing of alfalfa. Let us continue to have this splendid cooperation which is so necessary to get alfalfa permanently established as Wisconsin's best hay crop.

THE SIBERIAN ALFALFA SEED SITUATION

I desire to call the special attention of our members to what seems to be a propoganda for selling our farmers Siberian alfalfa seed at the exhorbitant price of \$2.00 a pound. This variety is the Cossack, which was introduced from Russia by the United States Department of Agriculture in 1907. It is sometimes called Hausen's Siberian Alfalfa. In this state it has been widely, if not wildy, advertised as the "Wonder Plant." It is claimed to be superior to every other kind of alfalfa. It seems it can be neither drowned nor dried out! It is supposed to have sort of a double barrellled case iron hardiness which makes it thrive on most any kind of soil from the poorest Jack pine sand to the richest clay. The hardest winters are said not to be of the slightest injury. Your secretary and the Experiment Station have been harshly criticised for not having heralded far and wide these wondrous merits of Siberian (Cossack) alfalfa! On the other hand we have also been unfairly and deceptively quoted so as to make it appear that we favor this variety above all others. I want, at this time, to explain our exact position regarding this particular alfalfa.

THE TRUTH ABOUT COSSACK ALFALFA

We have had the Cossack alfalfa under trial now for three years. It is a variegated strain like the Grimm and Baltic. We have found it an excellent variety but so far in no way superior in hardiness and yields to the Grimm or Baltic.

A neighboring experiment station has tested out the Cossack and arrived at this same conclusion. We hope that future tests may show it to be even better than the Grimm or Baltic. It can be distinguished from the Grimm and Baltic in the field, after it blossoms, by the presence of a large number of distinctly variegated or mixed colored blossoms of various shades and smoky hues of yellow, green and blue, brown, etc. These mixed blossoms will also be found in the Grimm and Baltic but they are less numerous and not so readily observed.

With all these excellent qualities we would not see fit to generally recommend Cossack alfalfa if the seed were to cost \$2.00 a pound. For the most part alfalfa seed production in Wisconsin has not been a commercial success. If it were the initial cost of the seed would not be a serious matter because we could raise our own supply and sell the surplus at a fancy figure, such as we were required to pay. With our humid conditions we are for the most part dependent upon the more arid West for our supply of seed. For this reason we have been very cautious in the past not to recommend any variety of alfalfa until we were assured our farmers could secure genuine seed at fairly reasonable prices. Last year we distributed some Grimm at 60c a pound. This year we hope to establish several hundred cooperative tests on the Grimm and we will supply our members with seed for experimentation at 40c a pound. We believe Grimm will continue to become lower in price as time goes on and as the production out West increases. Cossack alfalfa seed is quite scarce, but through the cooperative efforts of our association we have secured a considerable amount for a state-wide experimental test which we are supplying our members at 65c a pound. We want our members to try out the Cossack alfalfa in comparison with the Grimm and common, without paying \$2.00 a pound for the seed. Such a state-wide test will fully determine, by farmers' verdict, whether or not the Cossack is better than the Grimm. It will answer this question—"Are you willing to pay more for Cossack than for Grimm seed?" It will establish confidence in paying extra for variegated alfalfa seed, later on, when we hope the price of both Grimm and Cossack will more nearly approach the market price of com-

mon seed. We are not in sympathy with any movement to foist high priced "two-dollar-a-pound" alfalfa seed of any variety on our farmers here in Wisconsin.

TRANSPLANTING ALFALFA

Cossack (Siberian) alfalfa enthusiasts have laid considerable emphasis on transplanting. Broadcasting alfalfa as ordinarily practiced here in Wisconsin requires from 10 to 20 pounds of seed an acre. With Cossack seed at \$2.00 a pound (\$120.00 a bushel) the acre cost for seed would come between \$20.00 and \$40.00. Such figures as these would not result in very large sales, especially when the acre seed cost of hardy Grimm is between \$4.00 and \$8.00. But apparently to overcome this discrepancy the transplanting method which requires only from 2 to 4 pounds of seed an acre has been widely advocated. The plan briefly is as follows:

Sow alfalfa in the spring in rows three feet apart. Cultivate several times to keep down weeds. Dig up rows of plants in fall. Cut back central roots to six inch length and transplant individual plants in checks 3 feet by 3 feet. The following year cultivate several times to keep out weeds and blue grass.

Is this a practical method of growing alfalfa on our fertile farms here in Wisconsin? Have we time and can we afford to grow a hay crop like we would cabbage or strawberries? That transplanting under average conditions is a laborious, costly and impractical method of growing alfalfa is a statement not necessary for me to make to those who are farming for dollars and cents. There may be special soil conditions, such as the poorest sandy soils where this transplanting method might be of some value, but let me warn you that this matter is entirely in the experimental stage and as yet no one has demonstrated its practicability under any conditions here in Wisconsin. It is the opinion of your secretary that this method is mainly advocated to aid in the disposal of high priced Siberian alfalfa seed.

COSSACK, VS. GRIMM

A decided effort on the part of some Siberian (Cossack) alfalfa enthusiasts has been made to discredit the value of Grimm alfalfa. Grimm alfalfa seed production has been increasing so rapidly in the West that at present reliable seed can be obtained at from 40 to 50 cents a pound. It is very plain that with the excellent reputation that Grimm alfalfa has made for itself all through the northern part of the United States and the fact that it has so conclusively demonstrated its ability to live through severe open winters, which kill out common alfalfa, has radically curtailed the sale of Cossack alfalfa seed at the fabulous sum of \$2.00 a pound. To overcome this, some very unfair comparisons and statements have been made regarding the Grimm variety. I have on my desk a booklet on the "Wonder Plant"—Siberian alfalfa—on the back page of which is an illustration showing a row of ten rather small two year old plants of Grimm alfalfa. Below these is shown thirteen immense Cossack plants said to be of the same age.

The ten plants of Grimm in the illustration were taken from a field which had been broadcasted at the rate of 15 pounds of seed an acre and where there were from five to fifteen plants for every square foot of soil. According to information received the large Cossack plants which were said to be of the same age as the Grimm were transplanted in checks about two and a half feet apart each way and cultivated, thus providing *from six to eight square feet* of cultivated soil for each plant of the Cossack! No wonder they grew big! Is it fair to compare the size of Grimm alfalfa plants from a thickly seeded field with transplanted Cossack plants, having six or more square feet of free soil for the use of each plant to spread out and develop?

Transplant Grimm alfalfa and force it along like a garden vegetable in the same way as those Cossack plants were grown and it will produce these very immense crowns and roots. Even common ordinary alfalfa will grow big sturdy plants if transplanted, cultivated and developed under this costly and laborious "tobacco method" of growing alfalfa. We frequently hear of tap and branch rooted varieties of alfalfa. The Grimm, Baltic and Cossack are more dis-

tinctly branch rooted than the common. But every alfalfa becomes branch rooted with transplanting. The central roots fail to grow in length after they are cut back and hence they immediately develop an extensive lateral or side root growth. This is true not only of Cossack but of the Grimm and common as well.

Many of our farmers have been given a small packet of Cossack alfalfa with instructions to seed in rows and then transplant (3x3 ft.) in the garden. These plants are given garden care. They grow to be of tremendous size and the conclusion naturally follows that this Cossack is a very unusual alfalfa. But we forget that the Grimm or Baltic transplanted in the same way will produce equally surprising results as far as big plants with immense branched roots and crown are concerned. The only way two or more varieties of alfalfa can be rightly compared is to seed them under identically the same conditions.

The Cossack alfalfa is a good variety. It's a highly desirable alfalfa from the standpoint of yields and hardiness. Its widely variegated flower will become a characteristic of commercial importance as time goes on. We are not in any sense opposed to Cossack alfalfa as a variety. In fact we have great faith in it but we desire to inform our members that there are other good alfalfas as well.

PRESENTATION OF MEDALS AND DIPLO- MAS WON AT THE PANAMA PACIFIC EXPOSITION

R. A. MOORE, L. F. GRABER.

The annual meeting of the Experiment Association was looked upon as a fitting and opportune occasion for presenting the honors won by members of the association at the Panama Pacific Exposition. Professors Moore and Graber spoke briefly, congratulating the winners upon their success, and Professor Moore presented the awards as follows:

WORD OF PRESENTATION

Gentlemen:

It gives me great pleasure to present to you on behalf of the Panama Pacific Exposition and the Experiment Association these medals and diplomas which you won in San Francisco in 1915 on Wisconsin Pure Bred Grain. You are presented these as a token of appreciation of your untiring efforts to uphold the dignity and prominence of Wisconsin Agriculture.



Ready to receive the gospel of "better farming and better living."



Wisconsin's Prize Winning Grains on display in the Pure Seed Car.

THE EXPERIMENT ASSOCIATION AND THE FOOD CAMPAIGN

The sudden awakening of the nation at large to the seriousness of the food situation confronting ourselves and our allies since our entrance into the war has brought more clearly than ever to the attention of the state and nation the value of the Wisconsin Agricultural Experiment Association. With our entrance into the war just before seeding time this spring, and the focusing of the nation's attention upon our alarming food shortage and the necessity for increased production to feed ourselves and our allies, there came a sudden and unprecedented demand for seed grains. The Experiment Association, organized for the growing and marketing of pure bred seeds, was ready for the emergency and gave itself to the task of supplying the great demand for seeds.

Increased production means more land under cultivation and higher yields per acre. To put more land into crops requires a larger amount of seed, and a higher yield per acre means that the seed must be pure bred varieties of high quality. The members of the Experiment Association grow and market only pure bred high testing seed grains, and they were able to supply quickly the urgent and unusual demand for these this spring because of their cooperation and efficient system of putting purchasers in touch with the growers. To have an organization of this kind at hand at a time of national crisis is an important item in "agricultural preparedness."

THE PURE SEED AND HOME POWER SPECIAL

This was the legend which headed the advance announcements of the coming of the special train and which illumined the sides of the cars bearing the evidences and the message of better times to come. The "Special," run jointly by the Soo Line, the Wisconsin Bankers Association, and the Wisconsin College of Agriculture, was the agency used by these institutions to bring home to the people of the state two timely and important messages.

The Pure Seed Car contained a display of the finest Wisconsin grown seed grains, all prize samples at the Association's Pure Seed Grain contest, which was reinforced by legends and explanations driving home the vital facts concerning the advantages of planting only pure bred and high testing seed on our farms. Special emphasis was laid on the emergency crops such as beans, and the sandy land crops which can bring into productivity many acres of now unproductive land. Our hope for these crops is that in this time of national and world-wide food shortage, they will be the means of augmenting our productive capacity to a greater extent than increased yield alone on already productive land can accomplish.

The Home Power and Home Convenience car demonstrated that what was the dream of the farmer's wife of yesterday can be and is being made the reality of today. No longer need the essentially devoted duties of homekeeping on the farm be turned into drudgery and discomfort by the carrying of tons of water, by the back-breaking tasks over washing board and churn, and the lack of facilities for lighting, for bathing and for sewage disposal. The gasoline engine, the power churn, washing machine, and separator; the home light plant, simple yet effective systems for hot and cold running water in the house, and the septic tank system for sewage disposal, have brought within reach of the isolated farm home boons that were heretofore peculiar to the city. This was the message that was demonstrated by lectures



Home Power and Home Convenience Demonstration Car.

and observation of the running machinery and models in the home convenience car.

A lecture car and a tourist car for the lecturers and demonstrators completed the equipment. Sixteen counties were visited, twenty-seven stops made at which lectures and demonstrations were given, and over seven thousand people visited the train. The receptions everywhere were cordial and the people interested and enthusiastic in their appreciation of the gospel of better farming and better homes.

BUSINESS MEETING OF THE EXPERIMENT ASSOCIATION AND ALFALFA ORDER

Saturday, February 10, 8:00 a. m., Agricultural Hall.

Meeting called to order by President Michels. The minutes of the last meeting were read and approved, after which the following named officers were elected:

President.....	FRANK BELL, Columbus
Vice President.....	RUFUS GILLETTE, Verona
Secretary.....	R. A. MOORE, Madison
Asst. to Sec'y.....	E. D. HOLDEN, Madison
Treasurer.....	PETER SWARTZ, Waukesha

On motion, Mr. Ford Allen, Chicago, was unanimously elected honorary member of the association.

The Alfalfa Order elected officers as follows:

President.....	PETER SWARTZ, Waukesha
Secy. and Treas.....	L. F. GRABER, Madison

RESOLUTIONS

Whereas, the College of Agriculture for more than a third of a century has labored incessantly to educate Wisconsin farmers and their sons for the vocation of farming, and has by its work regenerated the agriculture of the state, offered the nation an example more widely imitated than that of any other Agricultural College; and whereas the fruit of this work is recorded in the agriculture of every state in the Union; Be it RESOLVED: That we earnestly intreat the legislature to reconsider the vital needs of the College of Agriculture by providing such appropriations as have been asked by its administrators and faculty, that its high quality of work may be maintained, and that our farmers may retain their leadership in economics, and that the work of sound agriculture may be perpetuated. That the food needs of the American nation may be provided, and that the hopes and aspirations of the rising generation may be sustained, and farm industry be conserved as the primary and highest industry of our people.

The Wisconsin Agricultural Experiment Association having learned with regret our associate and co-worker, J. J. Garland, assistant to secretary,¹ is about to leave service in the Agronomy Department: Be it RESOLVED: That we express to him our high admiration of his qualifications and our sincere appreciation of his work. We acknowledge his good fellowship, his faithful service, his loyalty to his Alma Mater, and wish him a hearty God's speed in his new field of labor.

Committee—

JAMES B. CHEESMAN, *Chairman*

HENRY E. KRUEGER

C. P. NORGORD

TREASURER'S REPORT

H. E. Krueger, treasurer, reported on the financial condition of the association as follows:

Balance in association treasury, Feb. 1, 1916.....	\$ 297.36
Received from fees, premium donations, etc.....	1,074.35
	<hr/>
Total receipts.....	\$1,371.71
Total disbursements to Feb. 11, 1917.....	891.36
	<hr/>
Balance in association treasury, Feb. 11, 1917.....	\$ 480.35

SECRETARY'S REPORT

R. H. Moore, secretary, reported on the use and condition of state funds. He reported as follows:

Balance in state treasury Feb. 1, 1916.....	\$3,588.75
State appropriation, July 1, 1916.....	5,000.00
	<hr/>
Total.....	\$8,588.75
 Total disbursements Feb. 1, 1916 to Feb. 9, 1917..	 6,030.41
	<hr/>
Balance in state treasury Feb. 10, 1917.....	\$2,558.34

The itemized financial reports are on file for inspection in the office of the association.

PREMIUM AWARDS

At Annual Pure Bred Grain Show

Feb. 8-10, 1917

COLLEGE OF AGRICULTURE, MADISON, WIS.

- 10 Ears Silver King (Wisconsin No. 7) Corn, North Section.
First W. G. Jamison & Sons, Appleton
Second H. L. Naber, Cecil
Third Fred Cisar, Marinette
- 10 Ears Early Yellow Dent (Wisconsin No. 8) Corn, North Section
First E. H. Thompson, Mikana
Second A. C. Feifarek, Peshtigo
Third Chas. Hull, Tigerton
Fourth Carl Peterson, Antigo
- 10 Ears Golden Glow (Wisconsin No. 12) Corn, North Section
First J. A. Hass, Ellison Bay
Second Chas. Hull, Tigerton
Third Alvin Schroeder, Bear Creek
Fourth M. L. Oleson, Mosinee
Fifth H. L. Naber, Cecil
- 10 Ears Wisconsin No. 25 Corn, North Section
First C. A. Correll, Crivitz
Second Ray Correll, Crivitz
Third J. Carstens, Crivits
- 10 Ears Silver King (Wisconsin No. 7) Corn, South Section
First Theron Thorpe, Tavera
Second Otto Wolf, La Crosse
Third John Bendel, Stoddard
Fourth J. A. Brunker, Ridgeway
Fifth A. N. Kelly, Mineral Point
- 10 Ears Yellow Dent (Wisconsin No. 8) Corn, South Section
First John Van Loon, La Crosse
Second J. R. Thorpe, Tavera
Third Lloyd F. Hubbard, Evansville
Fourth A. N. Kelly, Mineral Point
- 10 Ears Golden Glow (Wisconsin No. 12) Corn, South Section
First J. E. Brunker, Ridgeway
Second Jippa Wielinga, Midway
Third Otto Wolf, La Crosse
Fourth J. A. Brunker, Ridgeway
Fifth H. T. Draheim, Gotham
- 10 Ears Clark's Yellow Dent (Wisconsin No. 1) Corn, Any Part of State
First Theron Thorpe, Tavera
Second Elmer Biddick, Livingston
Third H. J. Block, Burlington
Fourth A. Austin, Janesville

10 Ears Murdock (Wisconsin No. 13) Corn, Any Part of State

- First Leo Brueckner, Jefferson
- Second H. C. Brueckner, Jefferson
- Third J. R. Thorpe, Tavera
- Fourth Stiles Brothers, Lake Mills
- Fifth A. N. Kelly, Mineral Point

10 Ears 8 Rowed Red, Yellow or Smut Nose Flint, Any Part of State

- First A. O. Popp, Jefferson
- Second Ed. Whitmore, Wausau
- Third W. A. Graham, Fennimore

10 Ears 8 Rowed White Flint, Any Part of State

- First Anton Bohl, Beaver Dam

10 Ears Pop Corn, Any Part of State

- First Wm. Moos, Onalaska
- Second H. T. Draheim, Gotham
- Third Alfred Gilster, La Crosse
- Fourth J. F. Staples, Onalaska
- Fifth Joe T. Haus, Jefferson

Single Ear Dent Corn, Any Part of State

- First Wm. Willinger, Galesville
- Second Leo Brueckner, Jefferson
- Third Stanley Seibion, Westby
- Fourth J. A. Bruncker, Ridgeway
- Fifth Otto Wolf, La Crosse

50 Ears Silver King (Wisconsin No. 7) Corn, Any Part of State

- First J. R. Thorpe, Tavera
- Second H. J. Block, Burlington
- Third Otto Wolf, La Crosse
- Fourth John Bendel, Stoddard
- Fifth Ed. Peters, La Crosse

50 Ears Golden Glow (Wisconsin No. 12) Corn, Any Part of State

- First H. C. Brueckner, Jefferson
- Second J. A. Bruncker, Ridgeway
- Third Jippa Wielinga, Midway
- Fourth Lloyd F. Hubbard, Evansville
- Fifth R. H. Lang, Jefferson

Peck of Wisconsin Pedigree or Oderbrucker Barley

- First Anton C. Holzschich, So. Kaukauna
- Second Fred Hile, Wausau
- Third A. Austin, Janesville
- Fourth Alvin Schroeder, Bear Creek
- Fifth Peter Dengel, La Crosse

Peck Two Row Barley

- First H. T. Draheim, Gotham
- Second H. E. Krueger, Beaver Dam
- Third A. O. Popp, Jefferson
- Fourth Herman Schoeneck, Enterprise

Peck Wisconsin Pedigree No. 1 Oats

- First Wm. Moos, Onalaska
- Second Ed. Peters, La Crosse
- Third J. L. Krause, Beaver Dam
- Fourth A. Austin, Janesville
- Fifth John Dettwiler, Monroe

Peck Pedigree No. 5 or Swedish Select Oats (Wisconsin No 4)

- First Chris. Michelson, Hazelhurst
- Second H. E. Krueger, Beaver Dam
- Third Frank Gasper, Rockland
- Fourth Ed. Peters, La Crosse
- Fifth Eric Mickelson, Pembine

Peck Sixty Day or Kherson Oats

- First H. T. Draheim, Gotham
- Second Wm. R. Leonard, Jefferson
- Third Lloyd F. Hubbard, Evansville
- Fourth H. E. Krueger, Beaver Dam

Peck Any Other Variety of Oats

- First H. E. Krueger, Beaver Dam
- Second Carl Iverson, Kenosha
- Third W. A. Graham, Fennimore
- Fourth Herman Schoeneck, Enterprise
- Fifth Ed. Peters, La Crosse

Peck Winter Wheat

- First Wm. H. Basse, West Allis
- Second A. O. Popp, Jefferson
- Third A. N. Kelly, Mineral Point
- Fourth Wm. Moos, Onalaska
- Fifth H. Pralle, La Crosse

Peck Spring Wheat

- First H. T. Draheim, Gotham
- Second Géo. Stivarius, Fennimore
- Third Wm. Moos, Onalaska
- Fourth J. R. Thorpe, Tavera
- Fifth Ed. Peters, La Crosse

Peck Wisconsin Pedigree Winter Rye

- First Ed. Whitmore, Wausau
- Second A. O. Popp, Jefferson
- Third F. F. Prochnow, Luxembourg
- Fourth R. Kressin, Cedarburg
- Fifth E. D. Cook, Plainville

Peck Medium Red Clover Seed

- First Fay Brothers, New Richmond
- Second Schmidt Brothers, Foxboro
- Third A. N. Kelly, Mineral Point
- Fourth J. L. Krause, Beaver Dam

Peck Mammoth Clover Seed

- First W. A. Graham, Fennimore
- Second Stanley Sebion, Westby
- Third J. L. Krause, Beaver Dam

Peck Alsike Clover Seed

- First Otto Wolf, La Crosse
- Second Schmidt Brothers, Foxboro
- Third J. L. Krause, Beaver Dam

Peck Timothy Seed

- First A. N. Kelly, Mineral Point
- Second H. E. Krueger, Beaver Dam
- Third A. Austin, Janesville
- Fourth R. J. Plenty, Rice Lake

Peck Silver Hull Buckwheat

- First H. E. Krueger, Beaver Dam
Second Fred Swerington, Peshtigo

Peck Japanese Buckwheat

- First H. T. Draheim, Gotham
Second A. O. Popp, Jefferson
Third J. L. Krause, Beaver Dam
Fourth H. E. Krueger, Beaver Dam
Fifth A. Austin, Janesville

Peck Black Soy Beans

- First Albert Dettman, Peshtigo
Second Harvey Ward, Babcock
Third A. O. Popp, Jefferson
Fourth J. A. Hass, Ellison Bay
Fifth H. E. Krueger, Beaver Dam

Peck Yellow Soy Beans

- First A. O. Popp, Jefferson
Second R. Kressin, Cedarburg
Third G. Westerhouse, Onalaska
Fourth H. E. Krueger, Beaver Dam

Peck Smooth or Wrinkled Peas

- First Herman Schoeneck, Enterprise
Second H. E. Krueger, Beaver Dam

Peck Green or Yellow Field Peas

- First Herman Schoeneck, Enterprise
Second Ed. Whitmore, Wausau
Third H. C. Sutcliffe, Black Earth
Fourth Fred Swerington, Peshtigo

Sheaf Pedigree or Oderbrucker Barley

- First H. T. Draheim, Gotham
Second R. H. Lang, Jefferson
Third Peter Dengel, La Crosse
Fourth Ed. Peters, La Crosse
Fifth J. R. Thorpe, Tavera

Sheaf Two Row Barley

- First H. T. Draheim, Gotham
Second Herman Schoeneck, Enterprise
Third Henry Ventzke, Wausau
Fourth A. O. Popp, Jefferson

Sheaf Pedigree No. 1 Oats

- First Peter Dengel, La Crosse
Second Elmer C. Schmidt, Wrightstown
Third Walter J. Steinhoff, Platteville
Fourth H. T. Draheim, Gotham
Fifth Otto Wolf, La Crosse

Sheaf Swedish Select or Any Other Variety Oats

- First Otto Wolf, La Crosse
Second Ed. Peters, La Crosse
Third Walter J. Steinhoff, Platteville
Fourth H. T. Draheim, Gotham
Fifth J. L. Krause, Beaver Dam

Sheaf Winter Wheat

- First Noyes Raessler, Beloit
- Second Arthur O. Popp, Jefferson
- Third J. L. Krause, Beaver Dam
- Fourth Wm. Moos, Onalaska
- Fifth A. N. Kelly, Mineral Point

Sheaf Spring Wheat

- First J. L. Krause, Beaver Dam
- Second Stanley Sebion, Westby
- Third Noyes Raessler, Beloit
- Fourth William Moos, Onalaska
- Fifth Ed. Peters, La Crosse

Sheaf Pedigree Rye

- First Ed. Peters, La Crosse
- Second Otto Wolf, La Crosse
- Third Noyes Raessler, Beloit
- Fourth Herman Schoeneck, Enterprise
- Fifth H. Pralle, La Crosse

Bundle of Alfalfa

- First Swartz Brothers, Waukesha
- Second John F. Hesprich, Lomira
- Third Walter J. Steinhoff, Platteville
- Fourth A. O. Popp, Jefferson
- Fifth W. Moos, Onalaska

Best Exhibit of three cuttings of Alfalfa

- First P. A. Paulson, Hudson
- Second Wm. Moos, Onalaska
- Third A. N. Kelly, Mineral Point

Bundle of Red Clover

- First H. T. Draheim, Gotham
- Second Walter J. Steinhoff, Platteville
- Third Wm. Moos, Onalaska
- Fourth J. L. Krause, Beaver Dam

Bundle of Alsike Clover

- First H. T. Draheim, Gotham
- Second J. L. Krause, Beaver Dam
- Third R. H. Lang, Jefferson
- Fourth Otto Wolf, La Crosse

Bundle of Timothy

- First H. T. Draheim, Gotham
- Second Noyes Raessler, Beloit
- Third Frank J. Lingley, Fox Lake
- Fourth Wm. Moos, Onalaska
- Fifth Elmer C. Schmidt, Wrightstown

Bundle of Sudan Grass

- First H. T. Draheim, Gotham
- Second John Van Loon, La Crosse
- Third Peter Dengel, La Crosse
- Fourth Oscar Hafs, Genoa Jct.
- Fifth Herman Schoeneck, Enterprise

Bundle of Soy Beans

- First J. L. Krause, Beaver Dam
- Second Arthur O. Popp, Jefferson
- Third Herman Schoeneck, Enterprise
- Fourth Noyes Raessler, Beloit

HONORARY CLASSES

10 Ears Wisconsin No. 1, Clark's Yellow Dent

- First J. R. Thorpe, Tavera
- Second H. T. Draheim, Gotham
- Third Frank E. Cairns, Mazomanie

10 Ears Wisconsin No. 7, Silver King Corn

- First J. R. Thorpe, Tavera
- Second H. J. Block, Burlington
- Third J. E. Brunker, Ridgeway
- Fourth N. Raessler, Beloit

10 Ears Wisconsin No. 8, Early Yellow Dent Corn

- First Wm. Schwandt, New Richmond
- Second A. Austin, Janesville

10 Ears Wisconsin No. 12, Golden Glow Corn

- First J. R. Thorpe, Tavera
- Second J. Van Loon, La Crosse
- Third H. Block, Burlington
- Fourth Chas. Howitt, Randolph

10 Ears Any Variety 8 Rowed Flint Corn

- First Chas. Howitt, Randolph
- Second H. T. Draheim, Gotham
- Third Geo. H. Leonard, Jefferson
- Fourth Wm. R. Leonard, Jefferson

Peck Pedigree or Oderbrucker Barley

- First Anton Bohl, Beaver Dam
- Second H. E. Krueger, Beaver Dam
- Third Wm. Moos, Onalaska
- Fourth Chas. H. Howitt, Randolph

Peck Pedigree No. 1 Oats

- First H. T. Draheim, Gotham
- Second H. E. Krueger, Beaver Dam
- Third A. W. Whitehead, Rockland
- Fourth N. Raessler, Beloit

Peck Pedigree No. 5 Oats or Swedish Select Oats

- First H. T. Draheim, Gotham

Peck Winter Wheat

- First N. Raessler, Beloit
- Second H. E. Krueger, Beaver Dam

Peck Spring Wheat

- First H. E. Krueger, Beaver Dam

Peck Pedigree Rye

- First N. Raessler, Beloit
- Second H. E. Krueger, Beaver Dam

SWEEPSTAKES CLASS

- Best Peck Spring Wheat
First H. E. Krueger, Beaver Dam
- Best Peck Pedigree Rye
First Ed. Whitmore, Wausau
- Best Peck Wisconsin Pedigree No. 1 Oats
First H. T. Draheim, Gotham
- Best Peck Wisconsin Pedigree No. 5 Oats
First Chris. Michelson, Hazelhurst
- Best Peck Wisconsin Pedigree Barley
First Anton C. Holzschich, So. Kaukauna
- Best 10 Ear Silver King Corn of entire Show
First J. R. Thorpe, Tavera
- Best 10 Ears Yellow Dent Corn of entire Show
First Leo Brueckner, Jefferson
- Grand Champion 10 Ears Dent Corn of entire Show
First J. R. Thorpe, Tavera

MEMBERSHIP LIST—1917

HONORARY MEMBERS

Allen, Ford.....Chicago, Illinois
 Ames, W. L.....Oregon
 Babcock, Dr. S. M.....Madison
 Bull, Prof. C. P.....
 St. Anthony Park, Minnesota
 Cary, Prof. C. P.....Madison
 Cheesman, Jas. B.....Racine
 Christie, Prof. G. I.....Purdue, Ind.
 Emery, Prof. J. Q.....Madison
 Harvey, Prof. L. D.....Menomonie, Wis.
 Hayes, W. A.....Milwaukee
 Hays, W. M.....Washington, D. C.
 Henry, Dr. W. A.....Wallingford, Conn.
 Howie, Mrs. Adda.....Milwaukee
 Johnson, A. C.....Chicago, Illinois
 Karel, Hon. L. A.....Kewaunee

Lehmann, Mrs. Eva.....Woodland
 Lehner, Philip.....Princeton
 McCormick, G. W.....Menominee, Mich.
 McKerrow, Supt. Geo.....Pewaukee
 Newman, Geo.....Mobile, Alabama
 Renk, Katharine.....Boise City, Idaho
 Rosa, Hon. Chas. D.....Beloit
 Russell, Dean H. L.....Madison
 Schauer, Hon. A. G.....Kewaunee
 Toole, William.....Baraboo
 True, Hon. John M.....Madison
 Utsunomiya, S. T.....
 Sapporo, Hokkaido, Japan
 Utter, Delbert.....Lake Beulah
 Wojta, Prof. J. F.....Madison

MEMBERSHIP BY COUNTIES

ADAMS COUNTY

Buckley, Lawrence.....Briggsville
 Cook, E. D.....Plainville
 Crothers, Floyd.....Kilbourn
 Johnson, Billie.....Strongs Prairie
 Jorestra, Bert.....Friendship
 Miller, John T.....Grandmarsh
 O'Neil, Timmie H.....Kilbourn
 Prochaska, Geo. W.....Friendship

ASHLAND COUNTY

Johnson, L. M.....Ashland
 Petersen, Andrew, Jr.....Ashland

BARRON COUNTY

Amundson, Norman.....Rice Lake
 Bartlett, Wm.....Barron
 Chelstrom, H. Herb.....Turtle Lake
 Cuff, R. L.....Barron
 Hanson, Hector.....Rice Lake
 Howe, John O.....Cornstock
 Huset, Alvin.....Chetek
 Jensen, A. R.....Rice Lake
 Krippner, L. M.....Rice Lake
 Mauerman, F.....Chetek
 Olsen, O. K.....Augus
 Plenty, R. J.....Rice Lake
 Rauchenstein, John.....Rice Lake
 Strand, Oscar M.....Rice Lake
 Svacina, Jacob, Jr.....Rice Lake
 Thompson, E. H.....Mikana
 Thorne, Fred.....Rice Lake

BAYFIELD COUNTY

Bresette, Edw.....Bayfield
 Fiege, Harry J. O.....Bayfield
 Rahmlow, H. J.....Bayfield
 Schellinger, Theo.....Iron River
 Welsh, James M.....Bayfield
 Wittwer, R. E.....Cable
 Yderstad, Thoralf.....Mason

BROWN COUNTY

Anderson, Sol.....Green Bay
 Cashman, Thomas.....De Pere
 Clark, John.....Greenleaf
 Clark, J. E.....Green Leaf
 Delahaut, Arthur.....Green Bay
 Delahart, J. J.....Green Bay R. D.
 Dillon, James N.....De Pere
 Holzschub, Adam J.....S. Kaukauna
 Holzschub, Anton.....S. Kaukauna
 Metzler, Lorenz.....New Franken
 Nies, Peter.....Morrison
 Schmidt, Elmer C.....Wrightstown
 Schmidt, Harold.....Wrightstown
 Van Den Heuvel, Frank.....West Depere
 Wall, James.....Greenleaf
 Zittlow, Chas.....West Depere

BUFFALO COUNTY

Berg, Jos.....Mondovi
 Bilderbach, W. F.....Mondovi
 Bond, Samuel.....Mondovi
 Fetting, Elmer.....Cochrane
 Freid, Roy.....Fountain City
 Hitt, O. A.....Alma
 Kaste, A. H.....Alma
 Kennedy, B. J.....Nelson
 Kennedy, L. J.....Nelson
 Kennedy, P. H.....Nelson
 Muehlstein, Gottlieb.....Alma
 Schlawn, Walter.....Cochrane
 Seyforth, H. G.....Mondovi
 Suhr, Adolph.....Cochrane
 Surh, O. A.....Fountain City
 Wick, H. F.....Alma
 Wilk, H. F.....Alma

BURNETT COUNTY

Akerlind, Fred.....Trade Lake
 Anderson, Edw.....Siren
 Anderson, Joe.....Grantsburg
 Arnes, Roy.....Grantsburg
 Arnes, Stever.....Grantsburg

Aronson, P. J.	Grantsburg
Barge, W. R.	Yellow Lake
Benson, Emil	Grantsburg, R. 1
Branstad, Newton	Grantsburg
Cassel, Aug.	Grantsburg, R. 1
Cornelius, Eric	Grantsburg
Danielson, Axel	Grantsburg, R. 1
Danielson, Edw.	Grantsburg, R. 1
David, G. R.	Webster
Edin, John P.	Grantsburg
Eklaf, Albert	Siren
Erickson, Aug.	Grantsburg, R. 3
Erickson, Nicholi	Grantsburg
Goedge, S. B.	Grantsburg
Hanson, John	Grantsburg
Hedlund, Gust.	Grantsburg, R. 1
Hilliker, Clare	Grantsburg
Hocking, Lewis A.	Grantsburg
Johnson, Alvin	Grantsburg, R. 1
Johnson, Daniel	Siren
Johnson, Emil	Grantsburg, R. 1
Johnson, Iver	Grantsburg, R. 1
Johnson, Lou	Grantsburg
Juline, Emile	Grantsburg, R. 1
Larson, Chas.	Grantsburg
Larson, Gotfred	Grantsburg, R. 1
Magnuson, Emil	Grantsburg
McCall, A. E.	Siren
Munkwitz, W. E. R.	Siren
Nelson, C. J.	Grantsburg, R. 1
Noltmier, M.	Siren, R. 1
Olson, Chas.	Grantsburg, R. 1
Olson, Fred	Siren
Parker, F. E.	Siren
Peterson, Chas. G.	Siren
Peterson, Peter	Grantsburg
Prichard, John T.	Grantsburg
Salmon, James E.	Siren
Sodberg, Nils	Siren
Swenson, Arthur	Grantsburg
Swenson, Chas.	Grantsburg
Thoreson, Thos. G.	Grantsburg
Thorison, Ed.	Grantsburg
Woodrich, E. W.	Siren

CALUMET COUNTY

Christoph, Theo. F.	Chilton
Huebner, Aug. H.	Forest Jct.
Huebner, Orvil	Brillion
Koehler, J. P.	New Holstein
Ohlrogge, Robt.	Chilton
Peik, Arthur C.	Chilton
Peik, Carl J.	Chilton
Sevenick, Tony	Hilbert
Vorpahl, Erich	New Holstein
Wipperman, Wm.	Chilton

CHIPPEWA COUNTY

Christiansen, W. O.	Chippewa Falls
Fawcett, Louis	Stanley
Goodman, Geo.	Cadott
Hanson, Alfred	Bloomer
Hanson, H. E.	Chippewa Falls
Hanson, H. E.	Bloomer
Jensen, William C.	Albertville
Kramer, H. F.	Bloomer
Lebeis, Frank	Bloomer
Loether, E. J.	Holcombe
Martiny, L. P.	Chippewa Falls
Mohr, Lawrence A.	Bloomer
Siepert, F. W.	Chippewa Falls
Smith, C. K.	(118 Newell St., Kenosha, until Spring 1918)
Tarr, Neil A.	Chippewa Falls, R. 3
	New Auburn

CLARK COUNTY

Dyre, E. L.	Greenwood
Frame, Victor	Colby
Hale, F. C.	Loyal
Hembre, H. J.	Greenwood
Hennin, E. L.	Loyal
Herdrich, Reno	Greenwood
Huntzicker, Fred	Greenwood
Jenks, R. M.	Loyal
Marvin, E. H.	Loyal
Neff, Charles W.	Neillsville
Nelson, Carl	Greenwood
Ports, Harry	Chili
Sample, F. W.	Withee
Smith, Jesse	Greenwood
Thompson, Arthur	Curtiss
Umlauf, Rudolph	Dorchester
Wayne, Joseph	Greenwood

COLUMBIA COUNTY

Anacker, Bernhardt	Portage
Batty, Geo. M.	Poynette
Bell, Frank	Columbus
Brereton, Thos. D.	Lodi
Brown, Erwin C.	Lodi
Carncross, J. E.	Okee
Church, W. H.	Lodi
Ellickson, A. C.	Arlington
English, W. C.	Wycena
Gasser, G. W.	Lodi
Gloeckler, Theo.	Portage
Grove, Albert	Columbus
Grove, Christian	Columbus
Hays, M. A.	Portage
Hughes, J. W.	Columbus
Hughes, Wm.	Rio
Hutchinson, Dr. Riley	Poynette
Johnson, Theo.	Rio
Lloyd, E. B.	Cambria
Nettland, Paul	Kilbourn
Palmer, M. C.	Columbus
Richards, A. W.	Lodi
Richards, R. E.	Lodi
Richards, W. M.	Lodi
Skarda, Geo.	Lodi
Stace, A. J.	Portage
Trapp, Peter	Columbus
Wheeler, J. R.	Columbus
Wright, L. A.	Columbus

CRAWFORD COUNTY

Eyers, Fred	Steuben
Hjelle, Ole H.	Soldiers Grove
Marken, R. L.	Gays Mills
Spencer, R. R.	Boscobel
Stevenson, Carl	Soldiers Grove

DANE COUNTY

Alexander, Arch. S.	Macfarland
Ames, F. M. & Son	Brooklyn
Anderson, H. C.	Cambridge
Angvick, Lars	Cottage Grove
Anthony, D. C.	Oregon
Bacon, C. W.	Burke
Belda, W. F.	De Forest
Benson, Ed. E.	Mt. Horeb R. D. 5
Berg, Carl O.	Stoughton
Berg, Roy V.	Stoughton
Bergum, Andrew	De Forest
Bergum, Arthur	De Forest
Bergum, P. V.	De Forest
Brickson, Andrew	Cottage Grove
Brickson, A. C.	Cottage Grove
Bricton, A. M.	Deerfield
Bricton, Sanford	Deerfield
Brigham, Chas. I.	Blue Mounds

DANE COUNTY—Con.

Brockmeyer, Arthur.....	Madison
Brue, N. H.....	De Forest
Cairns, Frank E.....	Mazomanie
Calloday, C. M.....	Stoughton
Calloday, E. W.....	Stoughton
Calloday, W. E.....	Macfarland
Chase, J. P.....	Sun Prairie
Chatterton, R. W.....	Basco
Chatterton, W. E.....	Basco
Chipman, W. R.....	Morrisonville
Chynoweth, H. E.....	Madison, R. 2
Cole, D. E.....	Marshall
Daley, Edwin.....	De Forest
Daley, S. S.....	De Forest
Damp, De Witt.....	Dane
Derr, Arthur.....	Columbus
Dreger, Emil.....	Madison, R. 6
Drumasky, Geo.....	Sun Prairie
Eastman, J. S.....	Madison, 511 State St.
Elvehjem, E. G.....	Macfarland
Endres, Frank X.....	Dane
Engelstad, Fred.....	Cambridge
Ford, J. F.....	Mazomanie
Friday, C. E.....	Oregon
Geib, W. J.....	Madison, 314 Campbell St.
Gillette, Rufus.....	Verona
Goth, W. H.....	Madison, R. 6
Grady, Geo.....	Oregon
Gramps, A. W.....	Verona, R. 1
Haight, Joe.....	Madison, R. 5
Holden, E. D.....	Madison
Holman, Peter.....	Windsor
Hopkins, B. F.....	Morrisonville
Howie, John.....	Waunakee
Jones, E. F.....	Sun Prairie
Kaltenberg, & Sons.....	Waunakee
Keenan, Wm. M. Jr.....	Macfarland
Kendell, F. W.....	Sun Prairie
Kendell, G. W.....	Sun Prairie
Kleppe, L. O.....	Belleville
Kneeland, Peter.....	Windsor
Kohman, Harry H.....	Dane
Koltes, Jas. F.....	Dane
Korfmacher, Carl.....	Cottage Grove
Larson, John D.....	Deerfield
Lee, Lewis J.....	De Forest
Lee, P. A. G.....	Deerfield
McConnell, O. S.....	Cottage Grove
McManus, Webb.....	Oregon
Meister, Arthur.....	Cambridge
Messerschmidt, L. H.....	Madison, R. D.
Mitchell, Geo.....	Cottage Grove
Mitchell, James.....	Cottage Grove
Moen, Orlov, J.....	Cambridge
Moore, R. A.....	Madison
Nelson, John.....	Deerfield
Nelson, O. L.....	Cambridge
Nordahl, A. J.....	Cambridge
Nordie, Alfred.....	Deerfield
Nordie, Henry.....	Deerfield
Notseter, O. H.....	Deerfield
Orr, Glen H.....	Madison, R. 4
Patterson, F. M.....	Oregon
Pederson, B. S.....	Windsor
Rasmussen, H. G.....	Black Earth
Reindahl, A. K.....	Madison, 106 E. Wilson
Renk, Wm. F.....	Sun Prairie
Reppan, M. C.....	Dane
Rorge, A. J.....	Stoughton
Ross, M. F.....	Belleville
Ruste, C. O.....	Blue Mounds
Ryan, Gerald T.....	Sun Prairie
Share, Albert.....	Macfarland
Showers, M. W.....	Mazomanie
Sime, Elmer.....	Cottage Grove
Simpson, L. L.....	Edgerton
Skare, Albert.....	Macfarland
Smith, Carl.....	Morrisonville
Snell, C. E.....	Madison
Spalding, Earl.....	Windsor
Spreeher, F. F.....	Burke

Stoeber, E. J.....	Madison, R. 7
Strommer, Geo. K.....	Cambridge
Sutcliffe, H. C.....	Black Earth
Thielke, Wm. J.....	Madison
Thomas, A. A. Prof.....	Madison
(Dept. Public Instr. Capitol)	
Thompson, Melvin.....	Mr. Horeb
Toepfer, Otto F.....	Madison
Veum, Nordan.....	Cambridge
Vieth, Arthur J.....	Sun Prairie
Vroman, H. E.....	Verona
Wernick, Wm.....	De Forest
White, Wm.....	Marshall
Willmarth, E. E.....	Sun Prairie
Witte, Fred H.....	Cottage Grove

DODGE COUNTY

Adams, A. W.....	Lowell
Barstow, A. F.....	Randolph
Barstow, Jas. E.....	Randolph
Beule, E. A.....	Beaver Dam
Bohl, Anton.....	Beaver Dam
Bremer, E. O.....	Hustisford
Bush, Leonard.....	Waupun
Bussewitz, Orlo J.....	Juneau
Bussewitz, Wm.....	Juneau
Caniff, Russell.....	Juneau
Craig, Chas. W.....	Oconomowoc
Goetsch, A. A.....	Juneau
Goetsch, F. A.....	Juneau
Grebe, F. P.....	Fox Lake
Hasse, Louis.....	Juneau
Herprich, John F.....	Lomira
Howett, C. H.....	Randolph
Indermuehle, F. A.....	Beaver Dam
Jones, John G.....	Beaver Dam
Krause, J. L.....	Beaver Dam
Krueger, H. E.....	Beaver Dam
Kuhlman, Arthur H.....	Lowell
Kuhlman, E. G.....	Lowell
Kuhlman, E. W.....	Lowell
Kuhlman, Gustav W.....	Lowell
Lehmann, Theo.....	Watertown
Luebke, Albert.....	Hustisford
Luebke, Aug. K.....	Hustisford
Luebke, E. R.....	Hustisford
Luebke, Frank W.....	Hustisford
Luebke, Otto C.....	Hustisford
Meyer, Albert.....	Beaver Dam
Neuberger, Wm. T.....	Reeseville
Owens, W. E.....	Fox Lake
Rahlke, N. A.....	Juneau
Roberts, R. F.....	Randolph
Roke, Edw.....	Columbia
Schumann, Hugo S.....	Beaver Dam
Urich, Alfred C.....	Horicon
Voigt, Fred.....	Lomira

DOOR COUNTY

Arneson, Alfred H.....	Sawyer
Carlson, Bros.....	Ellison Bay
Delair, Henry.....	Sturgeon Bay
Dettman, Fred.....	Forestville
Einerson, Gremur.....	Detroit Harbor
Hanson, Jens.....	Detroit Harbor
Hass, J. A.....	Ellison Bay
Holand, H. R.....	Ephraim
Jelinek, Benjamin.....	Sturgeon Bay
Larson, Eli.....	Sawyer
Mallien, J. A.....	Brussels
Martens, Chas. F.....	Egg Harbor
Necker, Karl J.....	Forestville
Powers, W. C.....	Sister Bay
Reynolds Preserving Co.....	Sturgeon Bay
Swenson, Walter.....	Sister Bay

DOUGLAS COUNTY

Canwenberg, W. J.	Superior
Carsons, Wm. W.	Superior
Cowie, E. G.	Superior
Crothers, D. H.	Superior
Doonan, G. J.	Superior
Krabover, Arthur	Superior
Lawrenz, R. H.	Superior
MacArthur, Hugh	Superior
Mertes, Frank	So. Range
Mullen, B. P.	Superior
Schmidt, Bros	Foxboro
Stone, B. N.	So. Range
Vogel, Arthur	Superior
Webb, W. H.	Superior

DUNN COUNTY

Brill, Geo. A.	Elk Mound
Dodge, E. Burnham	Menomomie
Emerson, Albert	Wheeler
Gehrking, F. J.	Elk Mound
Halvorson, Geo. H.	Menomonee
Kent, H. W.	Rusk
Kent, J. S.	Rusk
McDonald, R. M.	Menomomie, R. 3, Bx. 60
Ranum, Edmond S.	Elk Mound
Schlough, Roy	Wheeler
Supple, Alfred H.	Menomonee
Throne, C. W.	Eau Galle

EAU CLAIRE COUNTY

Allen, C. L.	Eau Claire
Arries, B. M.	Augusta
Bosher, Raymond	Strum
Burnell, Roy	Eau Claire, R. 7
Faast, B. F.	Eau Claire
Halbert, J. H.	Augusta
Orth, Walter	Eau Claire
Rebensdorf, Fred	Fairchild
Russell, A. C.	Augusta
Winter, W. W.	Eau Claire
Wright, W. C.	Eau Claire

FLORENCE COUNTY

Helgren, F. G.	Florence
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FOND DU LAC COUNTY

Burg Bros.	Peebles
Donovan, F. J.	Vandyne
Finder, Fred	Vandyne
Gibbard, P. J.	Ripon, R. 17
Gralapp, Ray R.	Vandyne
Hammen, Louis H.	Ripon
Hintz, Hugo F.	Oakfield
Hinz, Rupert	Ripon
Kaiser, Harvey M.	Fond du Lac, R. 1
Kuehn, Chas. A.	Brandon
Leemon, Roy E.	Waupun
Leith, R. H.	Vandyne
Mang, A. J.	Ripon
Michels, H.	Malone
Michels, Math	Peebles
Miller, A. H.	Waupun
Muritz, O. F.	Fond du Lac
Murray, A. K.	Ripon
Price, C. E.	Oakfield
Rather, A. P.	Peebles
Ruech, J. M.	Fond du Lac
Ruesink, H. G.	Waupun
Schmoldt, Clarence	Rosendale
Schultz, Otto	Taycheedah
Schussmann, Harry	Malone
Walgenbach, John	Fond du Lac, R. 5, Box 57
Wilsie, T. C.	Brandon

GRANT COUNTY

Biddick, Elmer	Livingston
Biddick, Harry E.	Livingston
Brodt, C. D.	Bridgeport
Di Vall, Wm.	Montfort
Goldman, Herbert H.	Livingston
Graham, Chester H.	Fennimore
Graham, P. S.	Fennimore
Graham, W. A.	Fennimore
Graves, Lester A.	Mount Hope
Groom, H. L.	Cassville
Grunenwald, Leroy E.	Livingston
Hampton, Clark	Lancaster
Hudson, Wm.	Boscobel
Kolar, T. J.	Muscoda
Kreul, H. C.	Fennimore
Morse, Edw. B.	Mt. Hope
Nelson, Ben C.	Livingston
Pickering, C. R.	Muscoda
Porter, Geo.	Fennimore
Preston, Geo. M.	Montfort
Ralph, Le Roy	Cuba City
Riechert, E. J.	Platteville
Runde, August	Sinsinawa
Runde, Frank	Sinsinawa
Sale, John, Jr.	Muscoda
Steinhoff, Walter	Platteville
Stivarius, Geo. A.	Fennimore, R. 4
Stone, R. W.	Lancaster
Tredemann, H. G.	Platteville
Walker, Guy	Fennimore
Wise, John H. Jr.	Platteville

GREEN COUNTY

Biglow, L. F.	Brooklyn
Coldun, Ashby	Juda
Dettwiler, Fred	Monroe
Dettwiler, John	Monroe
Douglas, Merrill, M.	Brodhead
Douglas, O. M.	Brodhead
Geigel, John	Monroe
Hook, H. L.	Brooklyn
Jeffery, F. D.	Monroe
Klossey, Henry	Monroe
Lichtenwalner, Arthur H.	Monroe
Lichtenwalner, C. H.	Monroe, R. 9
Man, H. G.	Brodhead
Morgan, Chas.	Albany
Purinton, C. G.	Monticello
Reese, Louie	Brooklyn
Rhyner, Jakie	Brodhead
Richards, Ed	Brooklyn
Smith, H. S.	Brooklyn, R. 2
South, G. B.	Brooklyn
Stauffer, Werner W.	New Glarus
Strommen, A. A.	Blanchardville
Waelti, John	Monroe
Wood, Walter C.	Albany

GREEN LAKE COUNTY

Abendroth, Geo.	Markesan
Davison, Harley	Markesan
Kolb, Earl	Berlin
Kutchin, V. S.	Green Lake
Kutchin, Victor M. D.	Green Lake
Page, G. F.	Berlin
Swift, Harold M.	Markesan

IOWA COUNTY

Arneson, M. L.	Barneveld
Biddick, Elmer	Livingston
Brunker, J. A.	Ridgeway
Brunker, J. E.	Ridgeway
Convey, Thos.	Ridgeway
Enloe, Jefferson	Rewey
Gabler, Arthur L.	Highland

IOWA COUNTY—Con.

Graber, Edw.	Mineral Point, R. D.
Jewell, Orlando	Mineral Point
Jones, Leslie T.	Arena
Kelly, A. M.	Mineral Point
Lauper, Wm. G.	Hollandale
Morrissey Bros.	Arena
Mueller, Henry	Livingston
Oimoen, Otto	Barneveld
Paulson, H. E.	Hollandale
Riddell, Lloyd	Edmund
Ross, Roland	Mineral Point
Shannon, H. L.	Avoca
Underwood, L. C.	Avoca
Van Natta, J. A.	Dodgeville
Watrud, William	Blanchardville
Zewell, Orlando	Mineral Point

JACKSON COUNTY

Dettinger, Stanley	Hixton
Erickson, Rob.	Melrose
Jones, P. W.	Black River Falls
Lane, O. J.	Hixton
Larson, Herbert S.	Osseo
McNab, A. J.	Black River Falls
Olsen, A. O.	Black River Falls
Olson, Peter S.	Northfield
Patterson, Gile D.	Melrose
Paulson, Blaine	Taylor
Peterson, Walkind.	Osseo
Ristow, C. S.	Black River Falls
Thompson, Adolph H.	Black River Falls
Wallen, Aron	Taylor
Winslow, E. M.	Black River Falls

JEFFERSON COUNTY

Albrecht, John	Watertown
Ballman, Theo.	Sullivan
Bauer, Victor W.	Jefferson, R. 2
Behling, Edwin	Johnson Creek
Brueckner, H. C.	Jefferson
Brueckner, Justus	Jefferson
Brueckner, Leo	Jefferson
Crossman, Walter	Lake Mills
Demerit, Milan D.	Lake Mills
Emmert, H. L.	Johnson Creek
Emmert, O. J.	Johnson Creek
Felton, G. H.	Jefferson Jct.
Fleming, Geo. W. Jr.	Jefferson
Goecke, P. L.	Watertown
Guttenberg, Frank Jr.	Jefferson
Hardtke, Wm.	Watertown
Haus, Joe	Jefferson
Henning, Geo.	Watertown
Hooper, S. C.	Palmyra
Huppert, Clifford	Ft. Atkinson
Huppert, Loran	Ft. Atkinson
Jaeger, Gilbert	Ixonia
Jaeger, H. C.	Ixonia
Kreuger, Alex.	Watertown
Lang, Edgar F.	Jefferson
Lang, R. H.	Jefferson
Lean, G. A.	Palmyra
Lehmann, Wm.	Woodland
Leonard, Geo. H.	Jefferson
Leonard, Wm. R.	Jefferson
Longley, H. N.	Dousman
Niere, Stuart	Watertown
Northey, F. G.	Palmyra
Northey, John	Palmyra
Northey, Royal	Dousman
Northey, W. G.	Palmyra
Parsons, Wm. A.	Ft. Atkinson
Popp, Arthur O.	Jefferson
Rabenhorst, B. W.	Jefferson
Rieck, Wm.	Watertown
Schlenoogle, Chas.	Watertown
Tyler, Royal	Jefferson
Ward, Chas. E.	Ft. Atkinson

Ward, R. W.	Ft. Atkinson
Ward, Theo. S.	Ft. Atkinson
Wick, Wm. F.	Watertown
Wollin, Albert C.	Johnson Creek

JUNEAU COUNTY

Frederickson, E. A.	Necedah
Frederickson, Hans H.	Necedah
Niles, Milo E.	Mauston
Remington, Merl O.	Mauston
Schroeder, Leonard	Camp Douglas

KENOSHA COUNTY

Barber, Chas.	Trevor
Beimer, Geo.	Salem
Betzer, R. A.	Kenosha, R. 1
Curtis, M. W.	Salem
Dexter, Walter S.	Kenosha
Iverson, Carl	Kenosha
Jensen, L. R.	Kenosha
Johnson, N. P.	Somers
Kerkhoff, Gilbert G.	Bassett
Kreuscher, Wm. R.	Union Grove
Langer, Frank J.	Kenosha
Leppensky, L.	Kenosha, 30 N. Pleasant St.
Lubeno, H. A.	Trevor
Lubeno, H. B.	Trevor
Neuhaus, John	Bristol
Orvis, L. C.	Salem
Roberts, F. W.	Woodworth
Sheen, C. J.	Salem
Thiers, L. M.	Kenosha

KEWAUNEE COUNTY

Blahnik, Anton A.	Algoma
Blahnik, G. F.	Algoma
Boudnick, John	Kewaunee, R. 7
Brey, Adam G.	Algoma
Cherveny, Winzel	Kewaunee
Collin, D. W.	Luxembourg
Defnet, Julius J.	Casco, R. 2, Bx. 88
Feld, A.	Algoma
Glandt, R. C.	Kewaunee
Haeyers, Martin	Luxembourg, R. 4
Holsbach, Theo.	Algoma
Hunsader, Henry	Kewaunee
Jelinek, Wm.	Kewaunee
Kassner, Edward	Kewaunee
Katel, Wm.	Kewaunee
Krofts, Rudolph	Kewaunee, R. 3, Bx. 73
Lienan, Karl	Algoma
Maedke, Erwin	Algoma
Nemetz, Frank	Kewaunee
Nye, Nic.	Algoma
Prochnow, F. F.	Luxembourg
Runke, Henry	Algoma
Runke O.	Algoma
Stoller, Louis	Kewaunee, R. 7
Wochos, Joseph	Algoma, R. 3
Zahorick, A. J.	Kewaunee

LACROSSE COUNTY

Bosshard, Eugene	Bandor
Campion, T. H.	Onalaska
Dawson, W. J.	LaCrosse
Dengel, Peter	LaCrosse
Eggler, V.	LaCrosse
Hauser, Albert	LaCrosse, R. 3
Hauser, Emil	LaCrosse, R. 3
Hauser, John E.	LaCrosse
Hemker, F. H.	West Salem
Hoffman, C. F.	Midway
Keppel, V. S.	Holman

Kunert, Louis	LaCrosse
Lovejoy, H. D.	West Salem
Markle, S. P.	LaCrosse
Moos, Otto	Onalaska
Moos, Wm.	Onalaska
Nuttleman, Alfred	West Salem
Nuttleman, Fred	West Salem
Ofstedahl, Walter	Holmen
Peters, Edw.	LaCrosse, R. 2
Pralle, Harry	LaCrosse, R. 3
Quall, O. P.	Midway
Van Loon, John	LaCrosse
Westerhouse, Garret	Onalaska
Whitbeck, W. F.	Onalaska
Wielinga, Jippa	Midway
Willey, Jewett	Holmen
Williams, Elias R.	Bangor
Wolf, Otto	LaCrosse, R. 2

LAFAYETTE COUNTY

Andrews, Al	S. Wayne
Ashton, Lester	Belmont
Cary, H. F.	Argyle
Glindinning, H. L.	Shullsburg
Ingwell, Albert	Blanchardville
Perry, Wm. H.	Gratiot
Riechers, F.	Belmont
Road, Minnick C.	S. Wayne
Road, Ole C.	S. Wayne

LANGLADE COUNTY

Carlson, L. E.	Bryant
Follstad, Anton	Elcho
Head, Henry	Bryant
Jackson, Van E.	Bryant
Marmes, Peter, Jr.	Antigo
Oldenburg, Albert	Antigo
Peterson, Carl	Antigo, R. 3
Swartz, John	Antigo
Smith, Rose	Antigo
Winslow, John W.	Antigo

LINCOLN COUNTY

Reich, Walter O.	Irma
Wrabetz, Frank	Tomahawk

MANITOWOC COUNTY

Arends, Albin H.	Cleveland, R. 3
Aremann, Harold	Two Rivers
Berge, Otis, J.	Valders
Clusen, Reinhold	Manitowoc
Dvorak, Henry	Mishicot
Hetzel, Gilbert	Cleveland
Hoefner, Herbert	Manitowoc
Johannes, Albert	Two Rivers
Klessig, Edwin	Cleveland
Koellmer, Gustav	Cleveland
Korzelka, John A.	Mishicot
Leleritz, Carl	Cleveland
Lutze, Geo.	Cleveland
Moldenhauer, W. C.	Manitowoc
Reinertson, R. M.	Valders
Riederer, Blasrus.	Cato
Riederer, Blase.	Cato
Salm, Leo	Cleveland
Sampe, Fred C.	Manitowoc
Shambeau, Walter	Two Rivers
Stein, Joseph N.	Cleveland
Strowig, Wm. A.	Cleveland
Wiegand, O. R.	Cleveland
Witte, Fred	Two Rivers

MARATHON COUNTY

Aberhold, Herman	Athens
Basemann, Otto	Edgar
Bauman, Mike	Marathon
Blogynski, Leo	Athens
Braun, Anthony	Athens
Brunkalla, Geo.	Athens
Burg, A. G.	Wausau
Burg, Harold, O.	Wausau
Degner, William	Athens
Erbach, Wm. A.	Athens
Erbach, Wm. L.	Athens
Fladvid, Ole	Athens
Habeck, Chas.	Athens
Hass, Arthur	Merrill
Heil, Fred	Wausau
Hoftschilds, Irvine	Athens
Hoge, Will	Athens
Kreutzer, Alfred	Athens
Kreutzer, Alf. F.	Athens
Kreutzer, John	Athens
Olson, Melvin S.	Mosinee
Parsch, Gustav	Wausau
Powell, Lester J.	Galloway
Riehle, Felix	Athens
Rietz, George	Athens
Runke, Rufus R.	Athens
Ruser, Arthur	Ringle
Schroeder, Leonard	Athens
Vaughan, John M.	Unity
Ventzke, Henry	Wausau
Von Berg, W. A.	Mosinee
Whitemore, Edw.	Wausau

MARINETTE COUNTY

Christ, Harold P.	Wausaukee
Niven, W. I.	Dunbar
Ramsay, John S.	Peshigo
Tobinson, Alfred	Coleman

MARQUETTE COUNTY

Borzych, Frank	Montello
Ellis, John B.	Endeavor
Fullmer, D.	Packwaukee
Giese, Albert	Montello
Hamilton, T. S.	Westfield
Herrick, Earl	Endeavor
Hollender, Fred W.	Oxford
Hume, Robt. I.	Endeavor
Hume, R. W.	Endeavor
Inghram, O.	Endeavor
Judd, J. M.	Endeavor
Judd, Roy C.	Endeavor
Manchester, James	Oxford
Manchester, John	Oxford
Marti, H. E.	Packwaukee
Miller, Frank	Endeavor
Nielson, Dennis	Packwaukee
Nielson, Joe	Packwaukee
Parrott, A. H. Jr.	Endeavor
Reid, D. H.	Montello
Root, Charles	Oxford
Tapping, Harland P.	Endeavor
Tapping, Jas. F.	Endeavor
Tjalacker, Albert	Packwaukee
Vine, C. H.	Packwaukee
Vine, C. K.	Packwaukee
Williams, J. R.	Packwaukee

MILWAUKEE COUNTY

Babcock, Chas. L.	Milwaukee (404 Colby-Abbott Bldg.)
Baden, H.	Hales Corners
Basse, Wm. H.	West Allis
Bernhardt, Chas. R.	Hales Corners
Duve, H. F.	West Allis

MILWAUKEE COUNTY—Con.

Hickcox, J. Gilbert.....	White Fish Bay
Marti, Herman.....	Milwaukee (Bx. 176, R. 2, Sta. D)
May, D. R.....	West Allis
Sievers, F. J.....	Wauwatosa
Sievers, John H.....	No. Milwaukee
Simandl, Chas. F.....	Milwaukee
Swan, N. J.....	Wauwatosa
Warzyn, Art.....	Oakwood

MONROE COUNTY

Aarness, O. C.....	Cashton
Aney, Earle, L.....	Norwalk
Chapman, Archie A.....	Tunnel City
Christensen, Hans G.....	Cashton
Erickson, H. N.....	Cashton
Foth, E. A.....	Norwalk
Foth, F. D.....	Norwalk
Freeman, G. A.....	Sparta
Hanchett, W. H.....	Sparta
Harris, R. E.....	Warrens
Kirst, A. L.....	Tomah
Mistle, Wm. O.....	Kendall
Muhlenkamp, Leo.....	Norwalk
Vieth, H. E.....	Norwalk
Whitehead, H. W.....	Rockland
Zirk, P. A.....	Kendall

OCONTO COUNTY

Bogsted, A. C.....	Lena
Brock, Martin L.....	Lena
Bubolz, Otto.....	Underhill
Cole, Schley.....	Mountain
Ferris, Geo. J.....	Little Suamico
Ganzeveld, Peter.....	Lena
Howell, John.....	Gillette
Keho, John.....	Oconto
Kieffer, A. L.....	Lena
Lembcke, Louis.....	Oconto Falls
Martineau, Andrew.....	Gillette
Masson, Wilfred.....	Lena
Piepenburg, Bert.....	Gillette

ONEIDA COUNTY

Blumnestein, Art.....	Woodruff
Campbell, Fred.....	Three Lakes
Juday, W. D.....	Rhineland
Kugel, Chas.....	Robbins
Leith, A. T.....	Monica
Michaelson, Chris.....	Hazelhurst
Schoeneck, Gust, Jr.....	Enterprise
Schoeneck, Herman.....	Enterprise

OUTAGAMIE COUNTY

Brucewitz, C. H.....	Black Creek
Cuff, C. H.....	Hortonville
Cuff, Geo. A.....	Hortonville
Culberston, M. Merle.....	Medina
Heinke, O. A.....	Sugar Bush
Jamison, Clarence.....	Appleton
Jamison, Harvey.....	Appleton
Jamison, Howard.....	Appleton
Jamison, Rob.....	Appleton
Jamison, Stanley.....	Appleton
Jamison, W. G.....	Appleton
Knopstein, Wm.....	New London
Letts, E. F.....	Appleton
Lyon, Earl.....	New London
Masche, Edw. M.....	Hortonville
Meulemans, Matthias.....	Kaukauna
Nieman, Arnold.....	Greenville
Nieman, R. W.....	Appleton
Raeder, Wm. J.....	Sugar Bush
Regel, Gus.....	New London
Ryan, Malacki.....	So. Kaukauna
Sasman, Louie M.....	Black Creek

Sawall, Lewis A.....	New London
Stichtman, Herman C.....	New London
Tubbs, Frank W.....	Seymour
Tubbs, Herbert.....	Seymour
Willard, Chas.....	New London
Wussow, C. A.....	Seymour

OZAUKEE COUNTY

Bartell, Reinhard.....	Thiensville
Clansing, Edwin.....	Grafton
Clansing, Herbert.....	Grafton
Dineen, C. F.....	Cedarburg
Groth, Louis.....	Cedarburg
Groth, Walter.....	Cedarburg, R. F. D.
Kieffer, Mike.....	Fredonia
Kressin, Wm.....	Cedarburg
Moths, Alvin C.....	Fredonia
Nero, Wm. C.....	Cedarburg
Nieman, Chas. J.....	Cedarburg
Pierner, B. M.....	Thiensville
Pierner, J. W.....	Thiensville
Sorweid, Wm.....	Cedarburg

PEPIN COUNTY

Brooks, Ralph.....	Arkansaw
Fleishauer, C. K.....	Arkansaw
Gustafson, Theo.....	Stockholm
Jahnke, Julius.....	Pepin

PIERCE COUNTY

Anderson, Oscar.....	Ellsworth
Bailey, F. D.....	Prescott
Baker, Roy O.....	Maiden Rock
Bjerkeng, Paul B.....	Beldenville
Brown, Monro.....	Bay City
Chapman, J. L.....	River Falls
Chapman, W. A.....	River Falls
Finstad, Frank.....	Beldenville
Fox, E. B.....	River Falls
Fuller, J. D.....	Maiden Rock
Fuller, R. J.....	Maiden Rock
Goodwin, H. V.....	Prescott
Gustafson, A. R.....	Maiden Rock
Hanson, H. O.....	Spring Valley
Huppert, G.....	Diamond Bluff
Jacobson, Chas. O.....	Spring Valley
Lowe, H. A.....	River Falls
Ninlos, Johnson.....	Ellsworth
Peirce & Son, F. D.....	River Falls
Rogers, Howard.....	Ellsworth
Smith, Fred.....	River Falls
Wild, Ed.....	Elmwood

POLK COUNTY

Carlson, Carl.....	Frederic
Clark, Perle H.....	Milton Jct.
Engelhardt, Guy C.....	Osceola
Francis, Geo.....	Frederic
Johnson, Ed. C.....	Frederic
Johnson, Willie N.....	Cushing
Klinka, J. S.....	Balsam Lake
Larsen, Fred S.....	Milltown
Larson, Frank.....	Frederic
Pedersen, H. M. R.....	Luck
Perry, E. B.....	Amery
Perry, Richard.....	Amery
Peterson, Conrad.....	Frederic
Peterson, H. C.....	Frederic
Peterson, Henry.....	Centuria, R. 1
Peterson, Raymond.....	Frederic
Rehbein, A. E.....	St. Croix Falls
Rutherford, F. L.....	Frederic
Wedin, Ruben.....	Frederic
Wilcox, C. R.....	Balsam Lake

PORTAGE COUNTY

Brekke, Anton.....	Rosholt
Conover, Burrell.....	Plainfield
Coyner, J. M.....	Amherst Jct.
Frost, H. G.....	Almond
Hansen, N. P.....	Amherst Jct.
Kollock, Henry.....	Bancroft
Olson, Earle.....	Almond
Peterson, Arthur.....	Nelsonville
Peterson, A. O.....	Amherst Jct.
Shaffer, Dan A.....	Almond
Shelburne, A. H.....	Bancroft

PRICE COUNTY

Dismas, Frank.....	Phillips
Meader, J. W.....	Brantwood
Nelson, Elmer.....	Prentice
Peterson, R. A.....	Ellsworth

RACINE COUNTY

Block, Hieron J.....	Burlington, R. 22
Bradley, J. F.....	Franksville
Chambers, O. Q.....	Union Grove
Cooper, Archie H.....	Franksville
Dunkelow, W. H.....	Franksville
Erle, Geo.....	Caledonia
Fawcett, C. E.....	Rochester
Haus, Enoch.....	Rochester
Hess, Geo.....	Franksville
Nelson, H. A.....	Union Grove
Nelson, R. W.....	Union Grove
Renak, Edw.....	Racine
Rhodes, Frank L.....	Kansasville
Robers, W. J.....	Burlington, R. 20
Schilling, J. J.....	Racine

RICHLAND COUNTY

Draheim, H. T.....	Gotham
Joseph, Emil M.....	Richland Center
Koch, Carl.....	Sylvan
Matthes, Fred G.....	Viola
Nourse, Glen.....	Sextonville
Semrod, J. D.....	Excelsior
Smith, J. H.....	Gotham
Stanek, V. T.....	Bloom City
Starry, Frank.....	Lone Rock
Steang, Frank.....	Lone Rock
Thompson, A. A.....	Richland Center
Thorpe, J. R.....	Tavera
Turgosen, J. H.....	Richland Center
Welton, G. E.....	Twin Bluffs

ROCK COUNTY

Arnold, F. H.....	Janesville, R. 1
Austin, A.....	Janesville
Austin, C. P.....	Janesville, R. 6
Austin, Frank.....	Janesville, R. 6
Austin, Geo. M.....	Janesville
Austin, Ira D.....	Janesville
Benedict, E. L.....	Beloit
Bingham, M. A.....	Milton
Cald, Leslie.....	Janesville
Coon, Elam P.....	Milton Jct.
Cooper, Maurice W.....	Edgerton
Crocker, W. C.....	Brooklyn
Dougan, W.....	Beloit
Franklin, A. G. & Son.....	Evansville
Hadden, F. A.....	Janesville, R. 1
Hahn, Robt. F.....	Clinton Jct.
Hemingway, Geo. L.....	Hanover
Howarth, Arthur.....	Janesville
Huebbe, E.....	Beloit
Johnson, Arthur F.....	Milton Jct.
Johnson, Frank M.....	Evansville

Johnson, Theo. H.....	Evansville
Lamb, Robert H.....	Janesville
Lamb, R. W.....	Janesville
Lentell, Bennie V.....	Beloit
Miles, Job.....	Evansville
Miller, H. E.....	Janesville, R. 8
Pelton, W. L.....	Edgerton
Raessler, F. H.....	Beloit
Raessler, N. R.....	Beloit
Reynolds, Delos.....	Orfordville
Richardson, Fred.....	Edgerton
Roherty, J. S.....	Evansville
Sayre, J. E.....	Edgerton
Steele, Orrie.....	Evansville
Tulles, V. C.....	Brooklyn
Ward, H. L.....	Avalon
Winkley, C. A.....	Clinton Jct.

RUSK COUNTY

Boyd, Henry.....	Ingram
Brainerd, S. J.....	Bruce
Gourdoux, Claude.....	Flambeau

ST. CROIX COUNTY

Arnquist, J. F.....	New Richmond
Arnquist, J. R.....	New Richmond
Anne, H. A.....	Baldwin
Bennett, W. E.....	New Richmond
Brown, O. H.....	New Richmond
Brunner, R. W.....	Hudson
Brusse, Wm.....	Baldwin
Casey, W. H.....	New Richmond
Dowling, Bros.....	Hudson
Fay, A. W.....	New Richmond
Fay, R. E.....	New Richmond
Gridley, E. W.....	Hudson
Hogan, E. J.....	New Richmond
Imrie, David.....	Roberts
Jabusch, Arthur.....	Deer Park
Jabusch, Henry.....	Deer Park
Jabusch, Wm.....	Deer Park
Johnson, Arthur.....	River Falls
Kruschke, A. C.....	New Richmond
Legrid, H. E.....	Deer Park
Legrid, Wm.....	Deer Park
Nelson, O. G.....	Baldwin
Nelson, Siguard.....	Baldwin
Palmbach, Geo. A.....	Roberts
Ruemmele, Albert.....	Hudson
Ruemmele, Geo. J.....	Hudson
Ruemmele, J. F.....	Hudson, R. 1
Schwandt, Wm.....	New Richmond
Setter, Nels.....	Deer Park
Stiles, Chas. L.....	Hudson
Thome, F. W.....	Hudson
Thome, Raymond.....	Hudson
Tracy, Lyman.....	New Richmond
Uber, Dewey.....	New Richmond
Webster, W. E.....	Hudson

SAUK COUNTY

Apple, Glen E.....	LaValle
Bork, Sam.....	N. Freedom
Border, Merrill A.....	Baraboo
Claridge, Albert.....	Reedsburg
Clingman, W. D.....	Reedsburg
Clingman, E. E.....	Reedsburg
Cummings, Ray.....	Delton
Davies, Geo. W.....	North Freedom
Fraust, Albert.....	Prairie du Sac
Hatz, J. A.....	Prairie du Sac
Johnson, Glenn.....	Baraboo
Jones, Glen.....	Merrimack
Kinsman, Glenn.....	LaValle
Kuehn, H. F.....	Spring Valley
Langdon, Earl J.....	Baraboo, R. 5
Lawrenz, H. L.....	Reedsburg, R. 1

SAUK COUNTY—Con.

Lillich, Wm.	Merrimack
Luetscher, Arthur	Plain
Ochaner, Arthur	Plain
Pearson, Lee	LaValle
Peck, Burton	Spring Green
Peck, H. B.	Spring Green
Peck, Lionel E.	Spring Green
Premo, J. E.	Baraboo
Premo, W. H.	Baraboo
Robson, Forrest	Spring Green
Rosenwald, Walter C.	Baraboo
Sprecher, Wesley	Plain, R. 1
Steidtmann, Edwin	Merrimack
Thorne, F. L.	Ableman
Voeck, G. E.	N. Freedom
Vonder Ohe, W. H.	Reedsburg

SAWYER COUNTY

Uhrenholdt, Jens	Hayward
Uhrenholdt, S. J.	Hayward

SHAWANO COUNTY

Berg, Carl J.	Tigerton
Erickson, Elmer	Rose Lawn
Gjermanson, Martin	Tigerton
Grinstad, Arthur	Wittenberg
Henningsen, Geo.	Pulcifer
Hildeman, Alex E.	Belle Plain
Johnson, Rudolph	Rose Lawn
Loken, Clarence	Tigerton
Mueller, Herman C.	Shawano, R. 1
Naber, H. L.	Cecil
Noorbom, Gust.	Wittenberg
Olson, Willie G.	Wittenberg
Peterson, W. F.	Pulaski
Sorley, E. B.	Tigerton

SHEBOYGAN COUNTY

Arentsen, John	Sheboygan
Athorp, W. C.	Sheboygan, R. 1
Bavry, Rudolph	Elkhart Lake
Deer, Joseph D.	Sheboygan Falls
Gorsege, M. E.	Haven
Heberer, C. H.	Adell, R. 9
Hinz, Herbert C.	Sheboygan
Hoppatt, M. J.	Sheboygan
Jurss, Benno	Plymouth, R. 25
Kappel, Gustav	Waldo
Koener, Geo.	Plymouth
Marx, O. H.	Haven
Oppenorth, Anton	Sheboygan
Orentson, John	Sheboygan
Parrish, Gordon	Plymouth
Parrish, J. O.	Plymouth
Reineking, Rudolf H.	Sheboygan Falls
Rock, Carroll G.	Plymouth, R. 26
Rothe, Dewey	Elkhart Lake
Streiber, W. G.	Elkhart Lake
Ten Pas, Walter B.	Cedar Grove
Wunsch, Alfred, J. C.	Sheboygan Falls
Wunsch, Hugo	Haven

TAYLOR COUNTY

Buehler, Geo.	Medford
McIlrath, H. R.	Medford
Zeddies, A. T.	Medford

TREMPEALEAU COUNTY

Becker, P. V.	Galesville
Bibby, Richard	Galesville
Bishop, W. E.	Arcadia

Bohrnstedt, L. S.	Trempealeau
Brovold, A. J.	Etrick
Chappell, G. E.	Trempealeau
De Boer, Martin	Galesville
Eid, Albert	Pigeon Falls
Famberson, R. A.	Whitehall
Hagestad, A. C.	Etrick
Hanson, L. M.	Eleva
Hegge, Albert	Galesville
Hellikson, J. A.	Etrick
Kinservick, Thor	Whitehall
Lamberson, R. A.	Whitehall
Lehnerts, Edmund	Arcadia
Markham, F. C.	Independence
Mattison, Thos.	Blair
Moen, Gilbert	Eleva
Nelson, Newell	Whitehall
Reid, Geo. R.	Independence
Ristau, E. O.	Osseo
Strader, Rolla A.	Osseo
Thompson, A. L.	Blair
Thompson, E. H.	Blair
Tucker, David, W. Jr.	Galesville
Young, A. W.	Galesville

VERNON COUNTY

Aberg, Jacob	DeSoto
Amodd, Clarence	Viroqua
Bendel, John	Stoddard
Dahl, A. J.	Viroqua
Echhart, Burton	Viroqua
Freehoff, Edwin	Coon Valley
Getter, Albert	Viroqua
Getter, Pearl	Viroqua
Gianoli, John A.	Genoa
Hoilien, Dave	Viroqua
Johnson, Alf	Westby
McClurg Brothers	Viroqua
Molley, Glenn, F.	Ontario
Oberson, Selmer	Westby
Oberson, Theo.	Westby
Rogers, H. J.	Stoddard
Sebion, Stanley	Westby

VILAS COUNTY

Kramer, L. A.	Lac du Flambeau
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WALWORTH COUNTY

Bowers, Leland	Delavan
Brennan, John	Lake Geneva
Brennan, G. E.	Lake Geneva
Broome, R.	Walworth
Dunwiddie, W. R.	Delavan
Ells, Ross H.	Darien
Hafs, Oscar	Genoa Jct.
Harris, J. S.	Delavan
Hatch, H. R.	Zenda
Hibbard, E. T.	Lake Geneva
Hibbard, L. O.	Lake Geneva
Hull, H. H.	Whitewater
Husten, H.	Eagle
Kelsey, Forrest B.	Delavan
Kiteley, Leonard	Sharon
Ledger, Albert	Lake Geneva
Lester, Clayton	Whitewater
Loomer, Howard	Elkhorn, R. 3
Mathews, M. D.	Whitewater
Palmer, F. Earl	Lake Geneva
Pester, Walter	Whitewater
Peters, Ezra	Sharon
Piper, Harry	Sharon
Robinsin, A. S.	Lake Geneva
Sawyer, Wilfred	Eagle
Servais, Omer, C.	Genoa Jct.
Showers, F. F.	Delavan
Smith, Carroll	Delavan
Smith, Homer	Delavan

Smith, Theo. H.....Delavan
Stury, Anton.....Elkhorn, R. 1
Taube, H. E.....Elkhorn
Thacker, Ed. F.....Zenda
Tratt, Ralph.....Whitewater

WASHBURN COUNTY

Carlson, M. J.....Spooner
Melby, Dan.....Spooner
Melby, Sigvart.....Spooner
Soholt, G. L.....Madge
Soholt, Ole S.....Madge

WASHINGTON COUNTY

Baertlein, W. A.....S. Germantown
Bartel, Paul.....Jackson
Briggs, R. B.....Rockfield
Buhn, V. F.....Rockfield
Butzke, Louis.....Jackson
Groth, Albert.....Rockfield
Groth, Hugo.....Cedarburg
Hanlyn, Winsor W.....West Bend
Harting, Fred P.....Rockfield
Hoelz, Christ P.....Rockfield
Janz, Jacob.....West Bend
Joeckel, H. G.....Jackson
Kauth, J. A.....S. Germantown
Klinka, Frank.....West Bend
Kressin, R.....Cedarburg
Lepien, Roy.....Hartford
Martin, J. J.....Allentown
Mayer, Christ A.....Richfield
Otts, H. Alfred.....Rockfield
Puls, A. O.....Hartford
Puls, John.....Hartford
Salter, Milo.....West Bend
Schowalter, E. J.....Jackson
Suelflow Henry.....Cedarburg
Weeks, T. S.....Rockfield

WAUKESHA COUNTY

Boyd, J. T.....Waukesha, R. 7
Brady, L. A.....Mukwonago
Brown, William.....Sussex
Butler, G. C.....Templeton, R. 20
Christopherson, A. D.....Oconomowoc
Constance, F. R.....Waupaca
Cummings, G. H.....Dousman
Dibble, Roy, Menomonee Falls, R. 18
Dobbertin, Grover.....Hartland
Edwards, John R.....Nashotah
Elliot, G. W.....Templeton
Emery, Raymond, J.....Oconomowoc
Goetz, Clarence.....Waukesha
Greene, H. T.....Genesee Depot
Gunderson, A. Lee.....Oconomowoc
Gunderson, Forrest.....Oconomowoc
Hall, Frank.....Hartland
Hall, John.....Hartland
Hauser, Ernest.....Waukesha
Haylett, Henry.....Waukesha
Hensel, Max H.....Dousman
Hill, Chas. F.....Brookfield
Hill, Chas.....Brookfield
Hill, W. H.....Brookfield
Husten, Lauren E.....Eagle
Jeffery, H. B.....Menomonee Falls
Kraetsch, A. C.....Pewaukee
Kroll, Wm.....Oconomowoc
Lean, Roy.....Dousman
Lobdell, M. C.....Mukwonago
Longley, Walter M.....Dousman
Lurvey, Clayton.....Dousman
Mitwede, Henry.....Waukesha
Nicholas, D. C.....Waukesha
Omann, E. H.....North Lake
Petersen, Carl T.....North Lake

Reather, Edward.....Lannon
Reather, Herman.....Lannon
Reyer, W. R.....Templeton
Rosenow, H. E.....Oconomowoc
Schoenich, L. E.....Dousman
Swartz Bros.....Waukesha
Tempero, Ernest.....Menomonee Falls
Voje, J. H., Jr.....Oconomowoc
Weir, Robt. J.....Mukwonago

WAUPACA COUNTY

Barnes, A. D.....Waupaca
Harrington, Myron.....Waupaca
Joch, Christo.....Weyauwega
Keating, J. R.....Ogdenburg
Knoke, Hugo.....Readfield
Knutson, A. O.....Ogdenburg
Lashua, Lee.....Northland
Meisner, Wm.....Embarrass
Mueller, Ed. W.....Bear Creek
Olson, Ludvik C.....Scandinavia
Pirner, Fred.....Sugar Bush
Pirner, John.....Manawa
Platte, H. H.....New London
Potts, A. R.....Waupaca
Rowe, A. B.....Waupaca
Schoen, Herman.....Manawa
Schroeder, Alvin.....Bear Creek
Shambeau, A. D.....Ogdenburg
Shambeau, S. D.....Scandinavia
Smiley, Gaylord A.....New London
Smith, Henry.....Waupaca
Thoma, Ernest.....Sugar Bush
Weinnann, H.....Iola, R. 2
Williams, Faville D.....Bear Creek
Williams, L. W.....Bear Creek
Williams, Stanley A.....Bear Creek

WAUSHARA COUNTY

Barnes, P. H.....Hancock
Bartleson, Lester.....Pine River
Bridgeman, C. G.....Wautoma
Byse, Gage B.....Wautoma
Deering, Leon W.....Wild Rose
Eagan, J. J.....Wautoma
Eager, Rolland D.....Hancock
Harris, A. M.....Plainfield
Hughes, John D.....Wild Rose
Jacobs, A. F.....Coloma
Jones, Howard.....Wild Rose
Knuteson, E. L.....Wautoma
Larson, Louie.....Wautoma
Leach, John F.....Wautoma
Leach, Leonard.....Wautoma
Simonson, Clarence.....Wautoma
Simonson, Glenn.....Wautoma
Storzbach, Emil N.....Plainfield
Tebbetts, Frank.....Plainfield
Thompson, H. A.....Wautoma

WINNEBAGO COUNTY

Blodgett, Gordon.....Neenah
Boss, Sam, Jr.....Oshkosh
Boss, U. C.....Oshkosh
Bussey, W. E.....Omro
Calkins, U. B.....Allenville
Cross, A. J.....Allenville
Foote, Chas.....Rush Lake
Graf, Kurt G.....Oshkosh, R. 1
Hasse, Herb.....Oshkosh, 204 Franklin Ave.
Ihrig, J. J.....Oshkosh, R. 4
Jahnke, Albert.....Neenah, R. 11
Krnigs, Joseph.....Winneconne
McShooler, Glen.....Omro
Parks, Wm. S.....Pickett
Pommerering, Edw. C.....Oshkosh

WINNEBAGO COUNTY—Con.

Race, Edw.....Omro
 Roberts, Kiel S.....Pickett
 Ryf, Hugo.....Oshkosh
 Schafer, Richard.....Fremont
 Teala, F. W.....Winneconne
 Treleven, Guy.....Omro
 Walter, A.....Oshkosh, R. 7

WOOD COUNTY

Anderson, Albert.....Grand Rapids
 Bean, A. P.....Vesper
 Clark, W. W.....Grand Rapids
 Huser, C. J.....Grand Rapids, R. 3
 Jackson, M. H.....Grand Rapids
 Lipsitz, Bessie.....Grand Rapids, R. 8
 Molter, Herbert.....Marshfield
 Ten Pas, Wm. J.....Arpin, R. 2
 Ward, Harvey.....Babcock
 Ward, W. L.....Dexterville

CANADA

Callender, J. W.....
Rokeby, Saskatchewan
 Gutschenritter, F. J.....
Scott, Saskatchewan

CALIFORNIA

Belz, F. A.....Visalia

ILLINOIS

Barber, Ben H.....Woodstock
 Barber, Geo. H.....Woodstock
 Behm, Geo. D.....Rockford
 Berglund, W. A.....Pecatonica
 Bryant, John D.....Earlville
 Chitlain, L. A.....Galena
 Clingan, Chas.....Lake Forest
 Coffin, Russell.....Rockford
 Dodson, Jas. W.....Shelby
 Egan, Miss M. J.....Amboy
 Engerson, Milton.....Durand
 Graham, M. Y.....East Dubuque
 Hult, L. P.....Rockford, 1139 5th St.
 Karsk, Arnold.....Pecatonica
 Knight, Bryce M.....Colfax
 McWethy, Fred O.....Dixon
 Miller, B. B.....Antioch
 Palmer, Glen.....Yorkville
 Rosenkrans, D. D.....Pawpaw
 Phillips, Jesse.....Elizabeth
 Schilstra, J. R.....Chicago
 Shaulis, Chester W.....Dixon
 Sheen, W. J.....Antioch
 Smith, Lounie L.....McHenry
 Stubblefield, Ansel F.....McLean
 Swayer, Wilbur J.....Gurnee
 Swift, Louis F. Jr.....Lake Forest
 Turnbull, K. L.....Glencoe
 Weaver, E. W.....Ottawa
 Webbe, W. E.....Barrington

IOWA

Lewis, Clyde, J.....Woodbine

INDIANA

Lewallen, Floyd C.....West Newton

KANSAS

Grennell, Victor C.....Humbolt

MICHIGAN

Eskill, O. F.....Whitney

MINNESOTA

Holcomb, W. R.....Plummer
 Lewandoske, Herman.....Bankton
 Nord, J. K.....Preston
 Wiker, N. H.....Mabel

MONTANA

Bennett, C. S.....Somers
 Weik, Silas.....Paris
 Wingate, A. C.....Richland

NEW YORK

Clark, W. E.....Darien Center

NORTH DAKOTA

Lawson, A. C.....Kenmare

SOUTH DAKOTA

Bussey, E. W.....Tabor
 Wells, J. E.....Mitchell

OREGON

Drolshagen, A. F.....Hate
 Young, Frank.....Wallowa

PENNSYLVANIA

Hackney, J. S. Jr.....Uniontown
 Rorer, William A.....Colebrook
 Watt, H. C.....Pittsburgh, 840 Inwood St.

UTAH

Carey, J. E. L.....Fruitland
 Van Evera, Rynier.....Arabaham

VIRGINIA

Colenso, J. E.....Richmond
 Crowgey, R. R.....Wytheville
 Rauchenstein, Emil.....Spring Grove

COUNTY ORDERS OF THE WISCONSIN EXPERIMENT ASSOCIATION AND OFFICERS WHO GUIDE THEM

BARRON COUNTY.

President—Wm. Bartlett, Barron, Wis.,
Vice President—W. H. Clark, Rice Lake,
Secretary-Treasurer—R. L. Cuff, Barron.

BROWN COUNTY.

President—George O. Lucia, Green Bay, R. F. D., No. 8,
Vice President—Frank Blonde, Green Bay, R. F. D. No. 1.
Treasurer—Louis Hansen, West De Pere, R. F. D. No. 3,
Secretary—J. B. Broekman, De Pere.

BURNETT COUNTY.

President—A. J. Duffy, Webster,
Vice President—E. R. Reitan, Leef,
Secretary-Treasurer—G. M. Briggs, Grantsburg.

CALUMET COUNTY.

President—Theodore Christoph, Chilton,
Vice President—John Salm, Chilton, R. F. D.,
Secretary-Treasurer—G. M. Morrissey, Chilton.

CLARK COUNTY.

President—Fred Sears, Neillsville, R. F. D. 2,
Vice President—J. E. Counsell, Neillsville, R. 1,
Secretary-Treasurer—Geo. E. Crothers, Neillsville.

COLUMBIA COUNTY.

President—F. E. Bell, Columbus,
Vice President—August Soldner, Reeseville,
Secretary-Treasurer—E. J. Fritz, Columbus, R. 3.

DANE COUNTY.

President—Otto Toepfer, Madison, R. F. D.,
Vice President—Emil Dreger, Madison, R. F. D.,
Secretary-Treasurer—E. D. Holden, Madison.

DODGE COUNTY.

President—Theo. Lehman, Watertown,
Vice President—J. G. Jones, Beaver Dam,
Secretary-Treasurer—H. E. Krueger, Beaver Dam.

EAU CLAIRE COUNTY.

President—Chas. L. Koll, Eau Claire, R. F. D.,
Vice President—J. H. Halbert, Augusta,
Secretary-Treasurer—A. C. Russell, Augusta.

FOND DU LAC COUNTY

President—A. W. Lawson, Rosendale,
Vice President—Geo. Hintz, Oakfield,
Secretary-Treasurer—Frank J. Donovan, Vandyne.

FOREST COUNTY.

Secretary-Treasurer—J. Swenhardt, Crandon.

COUNTY ORDERS
of the
WISCONSIN AGRICULTURAL
EXPERIMENT ASSOCIATION
53 COUNTIES NOW ORGANIZED
1917



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Vice President—Chas. Wilkins, Platteville,
Secretary-Treasurer—J. C. Brockert, Platteville.

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President—M. L. Karney, Brodhead,
Vice President—Wm. Smiley, Albany,
Secretary-Treasurer—C. Tochterman, Jr., Monroe.

GREEN LAKE COUNTY.

President—W. F. Kolb, Berlin,
Secretary—Wm. Michaels, Berlin,
Treasurer—Chas. Gibbard, Berlin.

IOWA COUNTY.

President—Otto Oimoen, Barneveld,
Vice President—Joe Brunker, Ridgeway,
Secretary-Treasurer—Jesse A. Van Natia, Dodgeville.

JACKSON COUNTY

President—C. S. Ristow, Black River Falls,
Vice President—P. A. Hemmy, Humbird,
Secretary-Treasurer—L. H. Robbins, Black River Falls.

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President—Orris J. Emmert, Johnson Creek,
Vice President—Wm. Leonard, Jefferson,
Secretary-Treasurer—Arthur O. Popp, Jefferson, R. F. D.

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President—H. H. Lois, Camp Lake,
Vice-President—Edward L. Holt, Kenosha,
Secretary-Treasurer—L. J. Morin, Kenosha.

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President—W. C. Katel, Kewaunee, R. F. D. 1,
Vice-President—J. H. Koss, Kewaunee, R. F. D. 1,
Secretary-Treasurer—Chas. F. Teske, Kewaunee.

LA CROSSE COUNTY.

President—Wm. Moos, Onalaska,
Vice President—Peter Dengel, La Crosse, R. F. D. No. 1,
Secretary-Treasurer—T. H. Campion, Onalaska.

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Secretary-Treasurer—

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President—A. P. Bean, Vesper, R. F. D. 1,
Vice President—J. F. Schmidt, Arpin, R. F. D. 2,
Secretary-Treasurer—W. W. Clark, Grand Rapids.

1604
FIFTEENTH ANNUAL REPORT

OF THE

**Wisconsin
Agricultural Experiment Association**

With Fifth Annual Report of

ALFALFA ORDER

ADDRESS OF PRESIDENT, SECRETARY'S REPORT WITH PAPERS
AND ADDRESSES GIVEN BY MEMBERS OF THE
ASSOCIATION AND OTHERS INTERESTED
IN PROGRESSIVE AGRICULTURE

COMPILED BY

R. A. MOORE, *Secretary*



MADISON, WIS.
DEMOCRAT PRINTING CO., STATE PRINTER
1917



SIXTEENTH ANNUAL REPORT

OF THE

WISCONSIN

Agricultural Experiment Association

WITH SIXTH ANNUAL REPORT OF

ALFALFA ORDER

Address of President, Secretary's Report With Papers and Addresses Given
By Members Of The Association And Others Interested In
Progressive Agriculture.

COMPILED BY

R. A. MOORE, *Secretary*

MADISON, WIS.
DEMOCRAT PRINTING CO., STATE PRINTER
1918



PRIZE WINNING EXHIBITS OF SHEAF GRAINS AND GRASSES, 1918 GRAIN SHOW

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FEB -3 1919

LETTER OF TRANSMITTAL

WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION

MADISON, WIS., 1918.

To His Excellency, EMANUEL L. PHILIPP,
Governor of the State of Wisconsin:

Sir—I have the honor to submit for publication, as provided by law, the Sixteenth Annual Report of the Wisconsin Agricultural Experiment Association, showing the receipts and disbursements the past year, also outlines for experiments, and addresses and discussions given at the annual meeting at Madison, February 7th to 9th, 1918.

Respectfully submitted,

R. A. MOORE,
Secretary.



PRIZE WINNING EXHIBITS OF CORN, 1918 GRAIN SHOW

COLLEGE OF AGRICULTURE
UNIVERSITY OF MINNESOTA
MADE IN U.S.A.

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OFFICERS—1918

President.....FRANK BELL, Columbus
Vice President.....RUFUS GILLETTE, Verona
Secretary.....R. A. MOORE, Madison
Asst. to the Sec'y.....H. W. ALBERTZ, Madison
Treasurer.....PETER SWARTZ, Waukesha
Clerk and Stenographer.....CLARA BRABANT, Madison

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Executive:

GEO. W. DAVIES.....North Freedom
J. R. THORPE.....Beloit
A. L. STONE.....Madison
J. B. CHEESMAN.....Racine
JESSE VAN NATTA.....Dodgeville

Resolutions:

J. B. CHEESMAN.....Racine
C. P. NOEGORD.....Madison
H. E. KRUEGER.....Beaver Dam

Finance:

C. P. NOEGORD.....Madison
H. N. LONGLEY.....Dousman
H. E. KRUEGER.....Beaver Dam

Cooperative Experiments:

Farm Crops.....R. A. MOORE
Soils.....A. R. WHITSON
Farm Engineering.....F. M. WHITE
Agricultural Chemistry.....E. B. HART
Agricultural Extension.....H. L. HATCH
Farm Management.....D. H. OTIS



PRIZE WINNING EXHIBITS OF GRAINS AND GRASSES, 1918 GRAIN SHOW

CONSTITUTION AND BY-LAWS

CONSTITUTION

Article I—Name.

This organization shall be known as the Wisconsin Agricultural Experiment Association.

Article II—Object.

The object of this association shall be to promote the agricultural interests of the state.

1st. By carrying on experiments and investigations that shall be beneficial to all parties interested in progressive farming.

2d. To form a more perfect union between the former and present students of the Wisconsin College of Agriculture so as to enable them to act in unison for the betterment of rural pursuits in carrying on systematic experiments along the various lines of agriculture;

3d. By growing and disseminating among its constituency new varieties of farm seeds and plants;

4th. By sending literature bearing upon agricultural investigations to its membership, and

5th. By holding an annual meeting in order to report and discuss topics and experiments beneficial to the members of the association.

Article III—Membership.

Section I. All former, present and future students and instructors of the Wisconsin College of Agriculture shall be entitled to become members of this association.

Section II. Honorary membership may be conferred upon any one interested in progressive agriculture by a majority vote at any annual or special meeting of the association.

Article IV—Dues.

A fee of fifty cents shall be collected from each member annually.

Article V—Officers.

The officers of this association shall consist of a president, vice president, secretary, and treasurer, whose terms of office shall be one year or until their successors are elected.

Article VI—Duties of Officers.

Section I. It shall be the duty of the president to preside at all meetings of the society and enforce the observance of such rules and regulations as will be for the best interest of the organization; to appoint all regular committees as he may deem expedient for the welfare of the association.

Section II. In the absence of the president, the vice president shall preside and perform all duties of the president.

Section III. It shall be the duty of the secretary to keep all records of the association; to report the results of all cooperative experiments carried on by its membership and the experiment station, plan the experimental work for the members of the association, and labor for the welfare of the society in general.

Section IV. The treasurer shall collect fees, keep secure all funds of the association and pay out money on the written order of the secretary, signed by the president. He shall furnish bonds in the sum of two thousand dollars, with two sureties, for the faithful performance of his duties.

Article VII—Amendments.

This constitution may be amended at any annual meeting by a two-thirds vote of the members of the association present.

Amendment No. 1—Adopted Feb. 9, 1906.

Any person residing within the state having completed a course in agriculture in any college equivalent to that given by the Wisconsin University, may become a member of this association under the same regulations as students from the Wisconsin College of Agriculture.

Amendment No. 2—Adopted Feb. 11, 1909.

Any County Agricultural School within the state may be admitted to membership of the Experiment Association upon request by the principal of such school and the payment of an annual fee of \$1.00.

BY-LAWS

Article I. The officers of this association shall be elected by ballot at the annual meeting.

Art. II. The president and secretary shall be *ex officio* members of the executive committee.

Art. III. This association shall be governed by Roberts' Rules of Order.

Art. IV. All members joining at the organization of this association shall be known as charter members.

Art. V. The time and place of the annual meeting shall be determined by the executive and program committees.

Constitution adopted and organization effected Feb. 22, 1901.

PRESIDENT'S ANNUAL ADDRESS

F. R. BELL, Columbus

The privilege of serving as President of this Association for the past year is an honor which I highly appreciate.

Never before in the history of our country or association have we been confronted by conditions such as we have had to contend with in the past eight months or rather since Congress, driven by the wrongs to the American people, and the danger to a whole world's freedom, declared war upon Germany.

The whole civilized world cries for bread, for meat, for produce and products of every kind. You know the results. Prices have gone up and up, until they have reached heights never even thought of in the wildest dreams of the present generation. In these high prices lies a very real danger that the aims of our association and the high ideals of our Secretary may not be allowed to reach their fullest realization.

With our acre yield of wheat exceeded by only one state and that by 6/10 of a bushel only, our oats yield 3rd, over the top with barley and near it with rye and corn.

With our hundreds of active members and with their thousands of bushels of pure bred seed, we are in a position not held by any other association or body of men in this or any other country to increase the yield of foods and fats for a starving world.

The temptation to cash grains at the present high prices is very great, one must admit. With one and one-half millions men withdrawn from the productive walks of life to be welded into a machine to consume and destroy, this must not be done. Our responsibilities to our country and ourselves will not allow us to dispose of a single bushel for consumptive uses, until the last fertile acre in our own state and neighboring states has been seeded with these prepotent high yielding pure bred seed grains.

Do you need money? Go to your banker. No banker in Wisconsin will refuse a loan made to hold seed until seed time. Your interest will be but a trifle paid easily by increased value of your grains and the fact that you have done your duty to your country, your fellowmen and yourself will be an added payment. In the meantime advertise "Pure Bred Seed Grain" talk "Pure Bred Seed Grain," aye! dream "Pure Bred Seed Grains." Right here we will meet these three men "The man who knows and knows not that he knows. He sleeps, awaken him. The man who knows not and knows that he knows not, he is awake, teach him, and the man who knows not but thinks he knows, he is a fool, leave him.

I think a very slick fellow placed me in the latter class in 1916. While stacking oats an automobile rolled into my yard and a gentleman dressed to the minute alighted and came over where we were at work and after commenting on the nice quality of grain we were handling, etc., from a box which he carried exposed to our view a few heads of oats, truly the longest I ever saw. These were the result of the labors of some oats wizard of New York, which had been so bred up that on thin fields of New York they would yield 100 bushels per acre. While on our rich Wisconsin fields 300 up to 450 would not be an unusual yield. Then he flashed his order book and showed a long list of names. Not one man of whom had attended our farm schools, not one of whom was a member of our County Order, nor do I think of the State Association. He had heard that I was President of the County Order and an order from me would be great help to him, etc. When he paused for breath I asked him; "if he had the endorsement of Professor Moore and the Wisconsin College of Agriculture?" "No, but Moore likes them, he likes them very much." Knowing Mr. Moore's slowness to grab a good thing for the farmers of Wisconsin, much to Mr. Man's disgust, we did not trade. A diligent inquiry on my part has unearthed but one lot of these wonderful oats. One hundred bushels from 4 bushels of seed and an investment of \$12 sown in the Garden spot of Dane county. While 4 bushels of our own Pedigree No. 1 oats gave me 150 bushels. This is not told in the expectation that any member will do likewise but rather that you will see some of the tricks which farmers have to meet and which we must overcome for their good and incidentally for our own.

In the light of the awful sacrifices of France, of Italy, of Belgium, of England, of Serbia and the rest of our Allies, to save themselves and us from the terrible fate which the modern Atli has planned for them and no less for us, we can never be forgiven unless we strain our effort to the breaking point to increase the production of foods and fat. For in the final analysis when the last battle is won and the war is no more, bread will be the bullets that bring peace.

In closing, we have the grain, we have the organization, we have the will to increase the 1918 crops manyfold, and may we be permitted to live, if we may, and die, if we must, for the glory and the honor of America.



PRIZE WINNING EXHIBITS OF WHEAT, OATS AND BARLEY, 1918 GRAIN SHOW

SECRETARY'S ANNUAL REPORT FOR 1917

R. A. MOORE, Madison

Members of the Wisconsin Experiment Association and Fellow
Agricultural Workers:

Another year has rolled around and it again becomes my duty to present to you my sixteenth annual report of the Wisconsin Experiment Association. It is needless to say that the Association has made great strides and the good results are radiating out to all parts of the world in rapid succession. In usefulness the Association has surpassed the fondest expectations of all its admirers, and we at times stop to think of what the ultimate outcome of the great pure bred seed grain work will be.

DISSEMINATION OF PEDIGREE SEEDS

At first the Association began by supplying neighboring farmers with the Pedigree seeds. Then it expanded so that members of the Association began to ship over the county line, and later over the state lines, and now to foreign countries, so consequently the good work of the Association spreads broadcast over the entire world.

This past year, beset with trials and difficulties, has been a serious one for the Association. Our country is in the throes of a great war, and the Association feels it as probably no other organization in the state. It is the purpose of this organization to furnish the seed which produces the food for our own and allied armies, and consequently we have accepted the task which carries with it the burden that it is now our duty to perform. I know that not a single member will hesitate in doing his just duty toward his country, and that all will be ready to put in a little more time, and sacrifice a great many things which have

heretofore been a pleasure for the sake of winning the war. It is no place for us to hesitate, but true to the principles which we inaugurated when the Association was organized will we go forward putting forth every ounce of energy that is within us until we succeed in establishing truth, principle, and liberty throughout the world to large and small countries alike.

In order to win the war our country is in need of funds and it is the sincere hope of your Secretary that every one will set aside sufficient funds from the sale of pure bred seeds to invest in Liberty Bonds. There is no safer security in our country, and our patriotic duty is to loan, if possible, practically every cent that can be spared until our country emerges from the difficulty in which she finds herself plunged. With this end in view the Experiment Association will put forth every ounce of energy within it to carry out these views.

MEMBERSHIP

The membership of our Association is very gratifying having reached the mark of 1,371 at the close of 1917. This healthy growth of the Association since its organization is exceedingly gratifying. Even in these trying times the membership holds up close to the high water mark. The membership stated are all those who paid up, down to the close of the year. Our bona fide membership is much larger as none of the members are listed who had not paid their fee during the past year. These, of course, will pay fees later, so consequently the bona fide membership of the state association is very close to 2,000 instead of 1,371, as reported.

Nearly all of these members are doing active work and live on farms; all acting with the one common purpose in mind—that of forever eradicating scrub seeds from our state and placing on the farms of the state and elsewhere the pure bred Pedigree seeds.

COUNTY ORDERS

The number of County Orders has gradually increased until at the present time we have fifty-three counties under organization with a total membership of approximately 3,000.

ALFALFA ORDER

The Alfalfa Order of the Experiment Association has gradually increased its membership and its capacity for doing work until it now has a membership of nearly 1,000, all active, live wires, that are doing a grand good work in the way of dissemination of better methods of growing this great crop alfalfa.

HEMP ORDER OF THE EXPERIMENT ASSOCIATION

One of the last units to be added to the Wisconsin Experiment Association is known as the Hemp Order. This combines into one great working body the hemp growers of Wisconsin. It may be interesting for the members of the Experiment Association to know that nine years ago the Department of Agronomy started hemp growing work in this state. It has taken many years to receive the fruits of our labor, but the work has gradually advanced and at such rapid pace of late years that it seemed the best for all concerned to have these growers helped by uniting with our Association. It may be interesting for the members to hear that last year nearly 8,000 acres of hemp were grown in Wisconsin, and the prospects the coming year are that approximately twice that amount will be sown. Wisconsin now ranks as the second state in America in growing hemp, and has more up-to-date hemp machinery than all other states combined.

One of the great difficulties that can be solved for the hemp growers is the production of hemp seed. There is no reason why the members of our Association cannot do well by growing seed for the members of the Hemp Growers Order and help out in this worthy line of effort.

Professor Wright who has been assigned this line of effort during the past two years has made excellent progress on breeding such varieties of seed as will mature good hemp fiber in this state. We feel that in order to succeed we will be obliged in the end to grow most of our own seed instead of letting other states do it for us, so consequently we are offering considerable hope to the members of the Hemp Order, and we sincerely trust that these hopes may be fully realized in the end.

SEED INSPECTION

We were not able to do the large amount of seed inspection in 1917 that we did the previous year. This was largely brought about by the change that had to be made through the resignation of Mr. Garland. Considerable additional work was heaped upon his successor so that we were not able to visit and report upon the large number of members that we did heretofore. However, in each and every case the membership was requested to send in bona fide samples of their seed before and after cleaning. This was done, and a line as to the quality of seed was secured in this manner. While this method is not considered as good as the personal inspection of the farm and seeds, yet it was the very best that could be done. We have great confidence, however, in the honesty of members and it is only once in a great while that any questionable seed is put on the market.

EXHIBIT OF PURE BRED SEEDS

The exhibit of seeds made at the last annual meeting of the Experiment Association was certainly a credit to the members, and we trust that this good work of competing in a friendly way with the Pedigree seeds will continue to be one of the features of our future annual meetings. The exhibition room is really an educational field where all have an opportunity of viewing the very best that can be produced in the land, and get a mental picture of what are almost perfect seeds of the various kinds. This mental picture is then carried back to the farms and an opportunity for emulation is secured by the members who attend these shows. It seems to me there is no member of the Association that can afford to stay away from the annual meeting of the Association. The life of the work is bound up in progress, and unless members attend our shows from year to year they undoubtedly will soon drift behind in this worthy line of effort. Consequently it is the wish of your Secretary to remind every member of the Association that it is his duty to be present. We like to have every member exhibit, but if one is not fortunate in having seeds that can be exhibited he should be present at least in person to help on in the discussions and

learn the most up-to-date methods relating to pure bred seeds that are brought before the Association.

PURE BRED SEED GRAIN TRAIN

A Pure Seed and Home Power Special was run throughout the state. Twenty-seven meetings were held and something in the neighborhood of 7,000 people attended. A full account of the success of this enterprise was written up in the 15th Annual Report. I wish to call the members' attention to it, however, so that they will read and think over this matter more carefully. We hope that this line of effort can be continued another year as in my estimation no one act of the Association has so thoroughly fixed in the minds of the people the value of the Pedigree seeds as the lesson taught on the pure bred seed grain special.

COUNTY FAIRS

At the many County Fairs listed during the past fall, one of the things in particular that pleased me was the fact that members of the Wisconsin Experiment Association are lending a helping hand towards putting up pure bred seed grain shows and exhibiting at their County Fairs. This, of course, should be encouraged and emphasized as the County Fairs are becoming more and more educational in character and I feel that this has been brought about quite largely through the energetic efforts of members of the Association to emphasize lines of educational efforts at such County Fairs. While considerable has been done along this line of effort, yet it does seem to me that there isn't half as much done as should be, and I hope that members of this Association will fully realize the importance of the fact that they are not only growers of pure bred seeds but disseminators of the best agricultural thought. In order to do this line of effort, it is the duty of every member of the Association to prepare exhibits for his County and State Fairs, and also the State Association meeting at Madison.

NEW LINES OF WORK

Several new lines of effort will be undertaken this coming year, and I cannot too thoroughly emphasize at the present time

that all members of the Association should be sure and treat all seed grains for the prevention of smut and other diseases. We feel that the people of the state are already beginning to lose quite a percentage of oats from smut. There is no necessity for any loss at all as the method of treatment is simple and very effective. A bulletin giving full information concerning the treatment of grains for smut can be secured by dropping a card to the Wisconsin College of Agriculture.

SWEET CLOVER

During the past year considerable effort was put forth in the way of growing sweet clover as a farm crop. Some successes were scored, but we have recorded a large number of failures, or at least partial failures. We hope after the present annual meeting to have much new information on this particular subject.

ALFALFA

A great expansion has been made in the growing of this great field crop. The Alfalfa Order of the Experiment Association under the able management of Professor Graber is largely responsible for the leaps and bounds made in this excellent line of endeavor. In a single year 54 tons of seed were sent out for dissemination purposes, and our acreage has gone up steadily until we are now credited by the United States Government with having 72,000 acres into this great milk producing plant. We are going on at a very rapid pace, and are having less failures and more successes.

SOY BEANS

The growth of the soy bean has gone forward steadily and is now of great importance to that portion of the state known as the sandy district. Soy beans can be grown on very sandy land providing they receive the proper inoculation. This is easily accomplished by securing a pure culture from the Wisconsin College of Agriculture, or by sprinkling on the seed before

planting some of the bacteria laden earth taken from a field where beans have been grown successfully.

A limited number of soy beans will again be distributed to the members of the Association this year as we wish to expand that line of effort. Many silos are now filled with soy beans, and a great deal of exceedingly fine hay is put up in the dairy districts of the sandy regions. It is safe to say that the soy bean is filling a long felt want. Any member who is not supplied with the soy bean bulletin can receive the same by merely asking for it.

FIELD PEAS

A line of effort which has not received the emphasis that should have been placed upon a crop which is of so much importance is that of growing field peas. Through the old common varieties the growing of field peas has been somewhat on the decrease. Prof. E. J. Delwiche of the Branch stations has recently gotten out several Pedigree strains of field peas which give much higher yields than the common varieties, and are much more uniform in their growth. It seems that, with the high price that field peas now command, this should be a very profitable work for members of the Association to engage in. There is no reason why for seed peas there could not at least \$1.00 a bushel over and above the general market price be secured, so consequently I urge with considerable emphasis the going into this line of effort. At the present time seed stock of field peas and canning peas could be secured by addressing Prof. E. J. Delwiche, Northern Branch Station, Farm, Ashland, Wisconsin.

Considerable emphasis has also been placed upon the growing of canning peas, and a steady demand for good seed stock has been made by our canning factories. It would seem to me this line of effort ought also to be a profitable one for the members of our Association.



CHARLES MORGAN

Memorial

CHARLES MORGAN

Once more the grim reaper has called from his ranks one of our faithful and true workers and it is with regret that we announce his departure from this life. Charles John Morgan was born in Brecksville, Ohio, February 27, 1851. In the fall of 1852 he came with his parents to Monroe, Wisconsin, where he lived till the spring of 1903. From that time until his death, he lived at Albany, Wisconsin.

He served his township and county a number of times in various offices. He was numbered among the progressive stock raisers of Wisconsin and his advice and counsel in business was often sought. He leaves a place in the ranks of mature business men of his community which is hard to fill.

When he was a boy fourteen years of age he assumed the responsibilities of his father's farm. The work was hard in those days and the burden heavy for the shoulders of this growing young boy, but he made it possible for the younger brothers and sisters to enjoy advantages denied to him. Such worldly possessions as he had were the results of his own endeavors. The Golden Rule was well exemplified in his life. To those who are left to grieve his loss he will be remembered for this loyalty to any cause which he thought was right.

The Wisconsin Agricultural Experiment Association has lost one of its faithful members and extends its sincere sympathies to the sorrowing relations.



JOHN S. EASTMAN

Memorial

JOHN S. EASTMAN

Another member of the Association has just answered the final call, that comes to all of us in due time, and taken his departure for the Great Beyond.

John S. Eastman of Madison, who for many years has been a loyal member of the Association and deeply interested in its work, died after a brief illness Thursday evening, April 25, age 58 years. Mr. Eastman was an electrician by profession but dearly loved agriculture and owned and operated two large farms near the place of his birth. Spartensburg, Pa. His earnest desire was to grow and disseminate pure bred seed grains and better farm conditions in his native state. He was called home to his Maker before his plans had been fully carried out, but we feel sure that the noble work he started in agriculture will live after him.

The writer was intimately acquainted with Mr. Eastman for many years and knew much of his inner life and noble purposes. It can be truthfully said of him that he stood for the better things of life and in his modest way gave much encouragement to his fellow man. For many years Mr. Eastman was active in temperance work and put forth his earnest efforts to make Madison a better city to live in.

He leaves a wife, young son, mother, three brothers and four sisters to mourn his loss.

The members of the Wisconsin Experiment Association feel his loss keenly and wish to convey their earnest sympathy to his wife and son and sorrowing relatives.

MARKETING OF PURE BRED SEEDS

HENRY MICHELS, MALONE

In the season just beginning the marketing of our seeds should receive more attention than ever before in spite of the fact that it will be easier to find a market than in ordinary years.

The supply of high class seeds of all kinds is going to be very short. There is but little corn. Clover and grasses made a light crop. Rye is coming into prominence because of its value as a wheat substitute. Oats are high in the market and farmers are going to prepare for a better crop by sowing better seed. The Kherson strains in particular are becoming very popular. Wheat will be in great demand as the acreage is increasing from year to year.

In our eagerness to get all the business we can, we are likely to disregard the fellow at the other end of the deal and ship something that may be not entirely to his satisfaction nor our own best interest.

We can never harp too much on keeping up the highest standards in the seeds we send out. We make a bid for the seed business on the strength of our argument that the Experimental Association stands for the best qualities of the best strains of seeds obtainable.

It is the duty of each individual member every time he makes a sale to live up to the reputation that the Association has established through long years of patient effort.

We must not lose sight of the fact that the Association makes it possible for us to do business as we are doing it and that every deal we make must be of such a character that the reputation of the Association will not suffer.

We collectively are the Association, and every act that reflects unfavorably on the Association will come back to the individual sooner or later.

Successful enterprises are founded upon the theory that a satisfied customer brings another and every deal must be made with an eye to the future.

Honesty and fairness must be the foundation upon which a business must be built if it is to be successful in the long run. Highest quality must be the aim. Every man must try to do his part a little better than the other fellow is doing it.

No seed grains should be sent out without being thoroughly fanned and screened. Even pedigree seeds will not yield well if light shrunken kernels are used.

Noxious weeds in seeds cannot be excused under any circumstances. The customer who pays good money for pedigree seed, does so in the hope that it will yield him a greater profit from his land. If he increases his yield by a few bushels per acre but at the same time finds patches of quack grass, Canada thistle or other bad weeds start up where the pedigree seed had grown, he is not likely to be pleased with his bargain.

It goes without saying that varieties must be kept strictly pure. Grains mix easily in the seeder, by the threshing machine, and in the bins and great care must be taken to avoid this. Corn will mix some under the best conditions obtainable through cross pollenization in the field but every effort must be made to eliminate off colored kernels and cobs.

Marketing seeds of high quality if undertaken in a business-like way is a very pleasant undertaking. Customers appreciate a square deal and their words of commendation are a source of great encouragement.

The average customer is honest, he does not demand more than he pays for, he is reasonable in everything and on the whole is a good fellow whose friendship should be cultivated. The seller who regards his customer only as a source of money and treats him accordingly, makes a big mistake, not only morally but from the financial standpoint.

It is only natural that a man engage in the seed business for the sake of the money he can make out of it. But the man who

looks at this side of it only and does not cultivate the friendship of his customers must have a hard conscience.

The best way to get the confidence of a prospective customer is to let him know that you stand squarely back of anything he may buy of you. If a customer has been disappointed in what he receives, it will not improve his regard for you by quibbling. I firmly believe in giving the broadest kind of a guarantee.

In a prominent place on every piece of literature we send out we plainly inform the customer that he himself is to judge whether he has received full value for his money and if he does not think he has we want him to return the seeds and we will refund the full amount he has paid us with transportation charges both ways.

It is very rarely indeed that a customer will take an unfair advantage of us and it has cost us practically nothing to live up to the guarantee. Besides, we know we get a great many orders that would not otherwise come to us.

Of course in a business of any size, most of the orders will come through the mails, and the management of this calls for close attention to the best recognized business practices.

A good many sales can be made to customers who have been directed to the member either through the secretary's office, the sale list or other literature published by the Association. But a member should not expect the Association to be his advertising agent.

This organization was established for the purpose of increasing the production of our farm crops and not to furnish an outlet for our surplus seeds. The business we get through inquiries received by the secretary's office is incidental to our work and is not the prime object of the Association. Each member must manage the selling end of his own business. The better he manages it the bigger it will grow.

The principals involved in the disposition of seeds from grower to planter by mail are the same as those which govern any mercantile mail order business.

The first step in the sale of seeds is to inform the man who wants to buy that you have the goods he wants. You must go to him before he can come to you. The best way to bring buyer and seller together is through advertising.

An agricultural paper is to be preferred to a general newspaper as its entire issue goes to farmers. Farmers of all classes whether live stock raisers or grain growers are in need of seeds every year so there is little to choose between a general agricultural paper and one that is devoted strictly to live stock.

In the case of newspapers, not only does a large percentage of the edition go to city people who are not interested in seeds, but a prospective purchaser knows that he can get in touch with the man who has what he wants more surely through a farm paper which caters to the farmers' needs in particular.

There may be instances where economical results can be obtained by using the home newspaper, but judging from my own limited experience, I would say that such cases were rare, and that such advertising, even though the rate per line or per inch is low, is expensive when the proportion of sales to advertising expense is considered.

The particular farm paper or papers to use would depend largely upon the seed to be sold.

In general I would say, "Try to get in touch with Wisconsin people, by using Wisconsin papers."

Wisconsin farmers buy more improved seeds than do the farmers of other states because the work of the Association has brought them to realize their superiority more fully. Also farmers will generally prefer to buy in their own state to save freight charges. Choose a paper which has a large circulation in the territory which you wish to reach.

Advertising space in a high class paper is very expensive and all that should be attempted is merely to inform the reader that you have what he wants. If he is interested he will write for further information and prices.

Having obtained the names of parties who are interested in seeds, the next step is to induce them to become customers. The reply to an inquiry may be made either in the form of a written letter or printed circular, or both. The reply should give the prospective customer all the information he needs in regard to breeding, productivity, germination, purity and prices. The seller must claim for his goods all they will stand but no more. Unreasonable boasts or bluffs never get a customer.

Every statement must be clear and easily understood so the reader gets the impression that he is about to deal with a square man.

It is of utmost importance that all correspondence be taken care of promptly. There is little excuse for not answering a letter by return mail. If letters are left to lie around for several days until a number have accumulated the answers are likely to be written hastily, penmanship will be careless, explanations be inadequate, and in general the prospective customer will be given the impression that you do not care enough about his business to give it your thought and time.

A buyer so slighted, usually does and is entirely justified in giving his order to someone who gives him better treatment. We must never lose sight of the fact that successful marketing of seeds require just as careful methods as the marketing of any other commodity, and that, other things being equal, the man who is the most careful in looking after the smaller details is the one who gets the business.

There is no other mark that betrays carelessness so surely and so quickly as the failure to give all matters prompt attention. If a correspondent has to wait a week before he gets an answer to an inquiry, he is fully justified in believing that the shipment of his order will be delayed still more.

Samples should be sent in all cases whether they are asked for or not. The sample must represent the actual condition of the seed as it will be shipped out. If it is better cleaned or in any way superior to the seed sent, it will result in a dissatisfied customer and a permanent loss of trade from that customer and all others with whom he communicates. The sample need not be large. One which can be mailed with the letter without necessitating extra postage is usually large enough.

Of course if a large order is in sight, a liberal size sample sent under cover of a separate mailing envelope will do no harm. Sample ears of corn should not be sent. It is as impossible to convey a correct impression of a lot of corn by sending one ear as it is to form an idea of the quality of a sack of barley by examining one kernel. It is harder to actually sample corn than other seeds especially if the sample be small.

The seller should always bear in mind, that a person who is in the market for any considerable quantity of seeds usually addresses inquiries to a number of parties, and the one who finally gets the order is the one who the customer believes will give him the satisfactory deal.

After receiving an order, the earlier seeds can be shipped the better. In the early part of the season when seeds will not be needed for sometime and when orders are not coming in fast, it is permissible in most cases to delay the shipment a few days, but later in the season shipments must be made at once as customers are then in a hurry and will worry about any unaccounted for delay.

If shipment is not made immediately, he must be told at what date it will go forward. The bill of lading should be mailed immediately after the shipment is consigned. It is not enough to merely send a card saying that goods have been delivered to the railroad.

Shipment should be made in substantial packages. Burlap sacks are not suitable for shipping seeds. They are likely to be torn in shipment, and they are almost useless to a customer after he has emptied the seed from them.

We make all our shipments in 16-oz cotton grain bags and charge market value for them. Packages should be made to look as neat and attractive as possible, but an artistic shipping tag and fancy box will not make up for a deficiency in quality but rather serve to set it off. It may seem unnecessary to call attention to the law which requires shippers to state name of variety, purity and germination percentages on shipping tags, but I know it to be a fact that some of our members fail to do this.

Not only is this a violation of the law punishable by a fine, but it inspires a distrust in the customer and his future orders are likely to be sent to a law abiding seedsman.

The duty of the shipper does not end with the delivery of the seed to the railroad. He must be willing to help trace delayed shipments for a customer, and in case of loss or damage he is the man who should file the claim for damages against the railroad as he is more familiar with the steps necessary to take than his customer.

Finally the shipper must stand ready to promptly refund money to any customer who is not satisfied even though it may seem that he expected too much. In short the entire treatment of the customer from the time that his inquiry is received until after the seed has been delivered must be such that he will order again. Besides one word which he may say in your favor to a

neighbor or a friend of his who is in the market for seeds, will do more for you than the best circular you can get out or the most convincing letter you can write.

Neither a seed business nor any other business can ever be made a permanent success if a new customer must be found for every sale that is made. If it is true that a new sucker is born every minute, it is just as true that every one that is caught makes enough of a splash about it to serve as an effective warning to all others who may be within hearing distance. As hearing distance is very great in these days of telephones and fast mails, the fishing soon becomes very poor for the man who does not give a dollar's worth for every dollar received.

A summary of all I have said can be put in the shape of Ten Commandments which govern the conduct of a successful seed business:—

First—Have a high grade article.

Second—Advertise it.

Third—Answer each inquiry honestly, promptly, fully, clearly, intelligently, individually.

Fourth—Use printed stationery and if the business is large enough to warrant it, use a typewriter.

Fifth—Keep your books in good shape so as to avoid mistakes. Unintentional errors are a most fruitful source of dissatisfaction.

Sixth—Ship seeds promptly, in substantial packages, and strictly of the same grade as promised.

Seventh—Be willing to trace delayed consignments for your customers and put in claims against carriers for damaged shipments.

Eighth—Back up your goods with the most liberal guarantee you can give even though it may seem that you are giving the customer too much leeway.

Ninth—If you are in the habit of getting out a printed circular, send one to each customer the next season as a reminder that you are still in business.

Tenth—Make your customer understand that your interest in him does not cease as soon as you have his money.

SEED GRAIN TREATMENT

R. E. VAUGHAN

Wisconsin Experiment Station.

More grain with less labor is the call of the day. The country needs an increased amount of wheat, barley, oats and rye and we must make every acre produce its greatest yield to meet this demand. Last year grain smuts and blight caused a considerable loss of the crop. Oats smut for example took a toll of about three million bushels representing monetary loss of nearly two and one-fourth million dollars, a loss which could have been largely prevented by seed treatment. Seed Treatment then means ammunition to win the war. Many farmers treated their grain last year, so that if it was not reinfected from nearby smutty fields or threshing machines, it will not be necessary for them to treat this year.

Barley stripe is a relatively new disease in our barley fields, but last year it caused large losses especially in the southern and eastern counties. It is known to cause more trouble when the season is cold and wet after the seed is put in the ground. The slower growth of the young plants seems to give the fungus a greater opportunity to get in its destructive work. The disease is spread by spores with the seed the same as with smuts. But unfortunately, the common dipping or sprinkling, which will control smut, will not control the stripe. However, stripe can be controlled if the seed is soaked in the formaldehyde solution for two hours. The strength of formaldehyde to use is one pint or pound of the strong commercial 40 per cent strength to 30 or 35 gallons of water. Put the seed you are going to treat in gunny sacks and submerge them in the solution in a barrel or tank. Stir them around a few times and when the two hours

is passed, drain and dry on a clean barn floor or canvas. Shovel over a few times to hasten drying.

The seed plot offers a solution for the farmer who does not have time nor labor to treat all his barley this year. This method is to soak seed enough for a few acres which should then be planted alone where it will not be contaminated by spores of the stripe blowing in from nearby fields. When mature, the grain from this plot should be threshed separately and kept by itself and used without treatment for the general crop next year. The 2-hour soaking will clean up all of the covered smut as well as the stripe and practically all of the loose smut.

Seed treating machines are coming into use in many places and are giving good satisfaction in controlling smut on oats, stinking smut on wheat and covered smut on barley. A number of our county agents have these machines and will loan them to the farmers in their counties this season. The treatment with the machines is often not quite as efficient as the short soaking but it has the advantage of requiring less labor.

The "dry method" of seed treatment has been very successfully used in controlling oats smuts. It has not been tried enough with barley, wheat and rye so that it can be recommended for these grains. The treatment by this method is to provide a quart hand atomizer or sprayer and fill it with a formaldehyde solution made up from 1 pint of the strong 40 per cent formaldehyde and 1 pint of water. Hold the atomizer near the grain and spray on the solution as the grain is being shoveled over. The quart of solution is sufficient for 40 to 50 bushels of oats. When the spray has all been applied pile up the oats and cover them with a damp blanket, canvas or sacks for five hours or over night. They are then ready to sow or may be bagged up for future use.

The advantage of the dry method is that it may be applied several weeks before seeding as the amount of liquid applied is so small that there is no danger of the seed being injured by freezing, heating or sprouting.

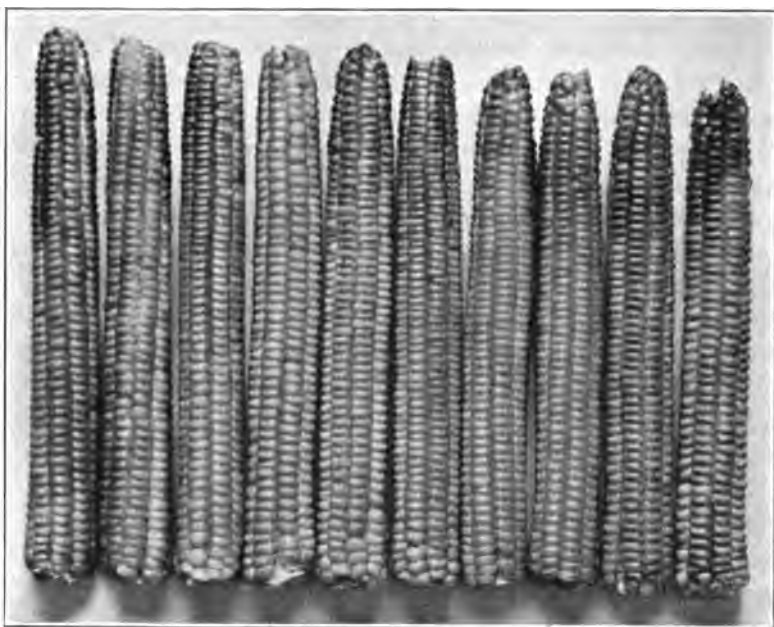
Ergot in rye can be removed by putting the seed into a 20 per cent salt brine. The ergot will rise to the surface and can be floated off leaving the clean rye. After separation the salt solution should be drawn off and the seed rinsed in clean water

to remove the excess of salt. The seed may then be quickly dried on a clean barn floor or canvas.

Black rust on grain causes large losses each year especially to spring grains and in seasons when there is considerable damp weather. Rust lives over winter on grain straw and grasses and in the spring spreads to the common barberry. It is here multiplied with great rapidity and returns again to the grains to start epidemics of rust. Seed Treatment is of no value in rust control and it is doubtful if rust can be entirely eliminated by any method. However, if the common European barberry bushes are pulled up and burned the rust will have no place to get a quick start in the spring. The small amount of rust that lives over in other ways will not be plentiful enough to cause severe outbreaks until after the majority of the grain is mature.

The common barberry is harmful. Dig it up! But fortunately the dwarf Japanese barberry is harmless and may be planted. In fact 10 plants of the dwarf kind are already being planted to one of the common tall kind.

Recent publications which will be helpful in handling grain diseases are: "Treat Seed Grains," Bankers' Farm Bulletin No. 56, March 1918; Wisconsin Experiment Station circulars: "Fight Grain Smuts and Blights," No. 57, revised, and "Ergot in Rye," No. 94.



PRIZE WINNING EXHIBIT OF SMUT NOSE FLINT CORN

Won by H. T. Draheim, Gotham, 1918 Grain Show.



GOLDEN GLOW WIS. NO. 12 CORN

First Premium Honorary Class, Won by J. Emmett, Brunker, Ridgeway,
1918 Grain Show

THE IMPORTANCE OF OFFICIAL CROP REPORTS

W. F. CALLANDER, Field Agent

Wisconsin Cooperative Crop Reporting Service

Never in the history of the United States have so many people and organizations been interested in food production as at the present time. "Food Will Win the War," meets the eye everywhere—but how are we to know whether we are overproducing or underproducing along any particular line? For many years the United States Government has maintained a crop reporting service, which publishes from time to time, reports on crop prospects and crop production as well as on numbers and value of live stock. These reports have been read and used to advantage by intelligent farmers in the marketing of their crops. Large commercial concerns have also been close students of these reports, in order to properly distribute their products, and the railroads have relied upon them to a large extent in the distribution of their cars for handling crops. People in general, however, have paid but little attention to the crop reports. Now, however, what we have produced on our farms and what we are likely to produce in the near future are matters of vital interest to everyone, and the crop reporting service of the United States Government cooperating with State agencies has become an important branch of the Government. Crop reports are eagerly read by many classes of people.

Without definite information of what is being produced, the United States Food Administration and other Federal and State agencies would be unable to intelligently formulate satisfactory food policies and regulations and those having charge of campaigns to increase the production of certain crops, such as wheat,

would be working in the dark without definite knowledge of what has been produced in the past. Furthermore, unless the approximate production of a crop was known, it would be impossible to determine the surplus available for export—a very important matter at this time.

In Wisconsin the work of crop reporting has been greatly improved during the past year by the combination of the crop reporting work of the United States Department of Agriculture and the Wisconsin Department of Agriculture, together with an improved law requiring assessors to gather crop statistics and send their reports direct to Madison. The final crop report for 1917 shows that Wisconsin has added to her acreage in crops since the last United States census, nearly 800,000 acres, or at the rate of about 100,000 acres a year. Many of the northern counties have practically doubled their area of cultivated land since the last census, while a number of the southern counties also show gratifying increases in cultivated acreage due to the drainage of marsh land. The change in acreage of the principal crops from 1909 to 1917 is shown below:

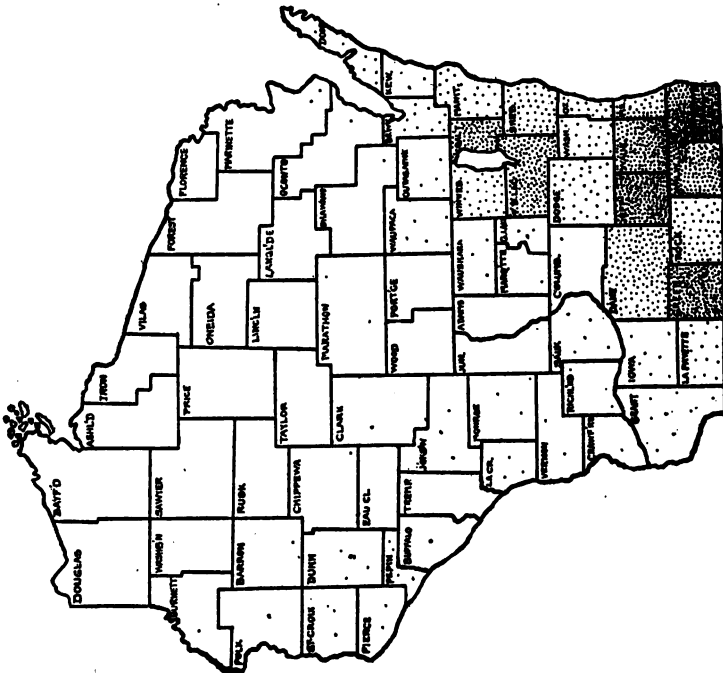
	1917	1909	Percentage increase	Percentage decrease
Corn.....	1,918,000	1,458,000	81	.....
Oats.....	2,250,000	2,165,000	4	.....
Winter wheat.....	93,000	62,000	50	.....
Spring wheat.....	146,000	75,000	95	.....
Barley.....	600,000	816,000	.....	26
Buckwheat.....	23,000	26,000	.....	11
Rye.....	410,000	339,000	21	.....
Beans.....	33,300	15,000	122	.....
Clover and timothy.....	2,647,000	2,499,000	6	.....
Alfalfa.....	72,000	18,000	300	.....
Potatoes.....	307,000	290,000	6	.....
Tobacco.....	48,800	40,400	19	.....
Sugar beets.....	18,200	12,400	42	.....
Cabbage.....	16,700	10,000	67	.....
Hemp.....	7,000	.....	.....	.....

It will be noted that alfalfa shows the greatest relative increase. The distribution of this crop in 1909 and 1917 is shown on the accompanying chart.

Definite information as to the acreage and production of crops by counties for the State has been furnished to the Agricultural Extension Service of the College, as well as to other State agencies engaged in campaigns to increase crop production.

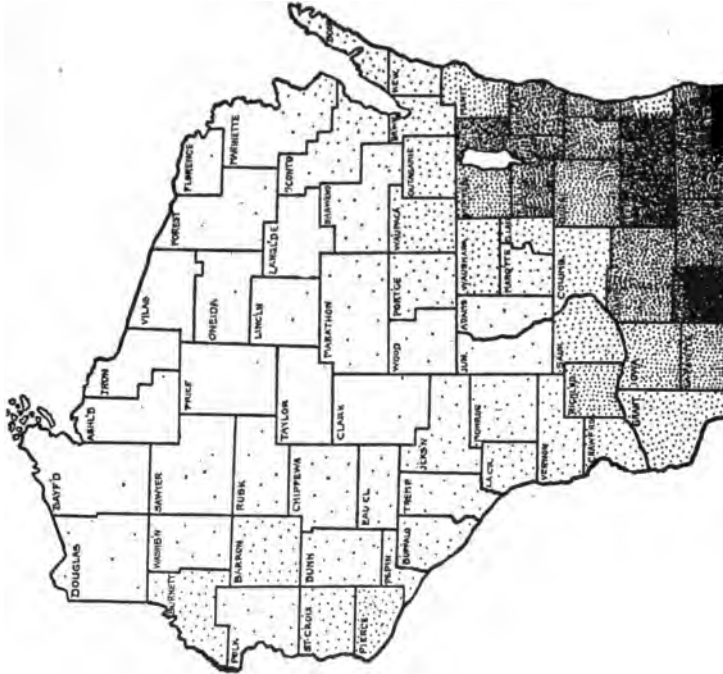
ALFA

A 300 per cent increase in the acreage of alfalfa since 1909.



Total acreage, 1909—17,986 (Census)

1 dot represents 10 acres.



Total acreage, 1917—72,069 (Assessors)

WHY THE FARMER SHOULD BE INTERESTED IN CROP REPORTS

Few farmers realize why the Government crop reports are of importance to him. Many are of the opinion that these reports are gotten out more for the benefit of grain and food speculators than for the benefit of the farmer, but such is far from true. Were it not for the Government crop reports, speculators interested in raising or lowering prices of farm products would issue so many conflicting and misleading reports that it would be practically impossible for anyone without great expense to form an accurate estimate of crop conditions and prospects. Farmers would suffer most from such conditions because they are not so well organized as other lines of business, nor are they in position to take advantage of fluctuations in market prices. The disinterested reports of the Government tend to prevent the circulation of false or misleading reports by speculators who are interested in controlling or manipulating prices.

If the Government crop reports were discontinued, the farmer would have no reliable information concerning crop prospects except in his own immediate neighborhood, and for crop prospects in other localities he would have to depend upon such information as interested speculators and dealers might choose to publish in the newspapers, which might or might not be correct. Prices are controlled more by the condition of the whole crop throughout the State or the United States and even foreign countries than by local conditions. The entire wheat crop of a county may be destroyed and yet the prices may be low or his county may have a bumper crop and the prices be unusually high, depending upon whether or not there is a surplus or a deficiency in the entire crop elsewhere. If the farmer reads the crop reports and forecasts of the Government as they are issued, he will be in position to judge for himself what the crop prospects are, as well as the probable prices, so he can decide intelligently how to market his produce and how to deal with the local buyers. Even the farmers who do not keep posted are indirectly benefited by the publication of Government crop estimates, because these estimates automatically tend to check and lessen the injurious effects of false reports sent out broadcast by interested speculators and their agents, in the same way that a police or con-

stable force tends to check but not entirely prevent crime in a community.

Large manufacturing concerns, agricultural implements and hardware dealers and jobbers, who neither buy nor sell farm products, are much interested in crop prospects. This knowledge enables them to distribute their wares economically, sending much to sections where crops are good and farmers will have money to buy and less to sections where crops are short and farmers will have less to spend. By avoiding heavy losses from improper distribution, manufacturers can afford to sell on better terms with resulting benefit to farmers.

The railroads of the country, which move the crops from the farm to the market must know in advance the probable size of the crop in order to provide a sufficient number of cars to handle it effectively and without delay. Cases are not infrequent when prices of grain or other products at railroad stations are reduced or there is absolutely no sale for the grain, because cars are not available for shipping, the farmer thus being among the sufferers.

SWEET CLOVER

As a Soil Builder and Feed Crop

W. P. GRAHAM, Rochelle, Ill.

I have been asked for the manuscript of an address delivered by me at the University of Wisconsin, recently, on the subject of Sweet Clover, to the end that it might be published in the Sixteenth Annual Report of the Wisconsin Agricultural Experiment Association. The following is a reproduction, as near as may be, of the main points brought out in my address.

During the last eight years I have been raising Sweet Clover on my farms at Rochelle, Illinois; first, as an interesting experiment; second, as an established and permanent branch of my farming operations. Raising Sweet Clover has passed the experimental stage on my farms and has become, instead, an essential and indispensable feed and fertilizer crop.

Sweet Clover is destined to play so important a part in soil building, at the same time producing prodigious quantities of feed, that it might be best to consider the plant from that angle, first.

I began growing Sweet Clover after I had tried, unsuccessfully, to grow the other clovers and alfalfa. I had found the other clovers and alfalfa unsatisfactory and uncertain, owing to certain climatic and soil conditions in Northern Illinois.

My experience with ordinary clovers and alfalfa was that, if I did not lose the stand in the dry summer weather, or by over-pasturing, I would lose it by freezing in the winter or Spring. I found that red and mammoth clover and alfalfa kill very easily, if pastured closely in the Fall. I also had trouble with cattle bloating, when pasturing these crops in the early Spring. These legumes are not successful as seed crops in my section of

the State. I have never been able to find where these plants have proved satisfactory as silage.

I had been working to evolve a system whereby I could produce feed—and plenty of it—from the same land and during the same season that I raised a cash crop, at no expense to my cash crop and, instead of robbing the soil, build up the soil year by year. To accomplish this ideal result, I was compelled to forsake the ordinary clovers and alfalfa and turn to a drouth resisting and comparatively frost proof plant. Hence my first experiments with Sweet Clover.

I have found that Sweet Clover does not succumb to drouth or to freezing which readily kills the other legumes. I have found that Sweet Clover may be sown with any of the small grain crops without detriment to the latter. I have found that I can raise a good crop of summer pasture, hay or silage along with the grain crop, thereby insuring a cheap by-product crop of feed without interfering with my cash crop. I have found that Sweet Clover, instead of robbing the soil, actually produces an excess of humus, nitrogen and even some potash.

As a feed for stock Sweet Clover is now recognized as a balanced ration and is equal to alfalfa in nutrition. Sweet Clover has the added advantage over other legumes in that it can be utilized as silage. Instead of using my cash crop for ensilage, I am able to utilize Sweet Clover, grown strictly as a by-product, to fill my silos.

I then began to work upon the problem of a cheaper and more profitable method of cattle feeding—putting on flesh at less cost. The plan of cattle feeding, as followed during the last 15 to 20 years, has not been a sure-profit plan. I felt convinced that the only way to eliminate the risk in cattle feeding was to produce a silage from a by-product crop, and use less of the cash crop in fattening cattle. I have found that Sweet Clover makes this possible.

I have placed my feeders on Sweet Clover pasture in the Fall after the nurse crop was removed, and had an average gain of 3 lbs. per day per steer for 60 days. The steers were then placed in the feed yard and fed on Sweet Clover silage and an average of 19 lbs. per steer of ground ear corn. On this ration the steers gained an average of 3 lbs. per day per steer, for 30 days. As

an experiment, I then gradually increased the corn ration to 32½ lbs. per day per steer for 30 days, and the steers gained only 2¾ lbs. per day per steer, though upon a more expensive ration than the previous 30 days. Thus I proved to my entire satisfaction that I could fatten my steers on feed containing a *preponderance* of a *by-product* crop and make them gain in weight as fast, if not, indeed, faster, than by feeding my high priced cash crop.

Personally, I have not experimented with Sweet Clover as a feed for dairy cows. I have never engaged in the dairy business. However, wherever Sweet Clover has been used as feed for producing milk, it has been found to be equal to any other forage. As an instance, Prof. R. A. Moore, of the University of Wisconsin, related to me the experience of a dairy farmer not far from Madison. Having removed the nurse crop with which Sweet Clover had been sown, this farmer found that he had a good stand of Sweet Clover and he turned his cows into the field. Within three days the cows were producing double the amount of milk that they had produced just before going onto the Sweet Clover pasture.

Considering the fact that Sweet Clover can be produced as a by-product crop; that it is available for pasturage as early as the middle of April, and in the Summer and Fall when the ordinary pasture is useless; that it is as good a milk producer as any known forage; that the milk produced is strictly a by-product and is therefore a profit over and above the cash crops raised; that, in spite of either drouth or frost, the dairyman is insured a plentiful supply of feed for his dairy stock; in face of these proven facts, it seems to me that Sweet Clover will be the solution of the ever recurring milk question which has caused so much trouble during the last year, and previously.

After eight years of careful experimentation and actual experience with Sweet Clover as a Soil Builder and Feed Crop, I have confidently come to the following conclusions:

1. As a feed, whether as pasture, hay or silage, Sweet Clover is equal to any known forage crop, if, indeed, it is not the most balanced ration that can be fed to live stock.
2. Sweet Clover is the most certain crop that can be raised among the legumes, on account of the fact that it is both drouth

resistant and withstands the freezing conditions better, either in Winter or Spring.

3. As a conditioner for feeders, prior to putting them into the feed yard for fattening, Sweet Clover pasture is superior to any other feed, and the cheapest as well, as they are not only put into prime condition for the fatting pen but unusual gains are made at the same time.



PASTURING THE SPRING CROP BY APRIL 15.
GRAHAM FARM, ROCHELLE, ILL.

4. As a fattening feed, coupled with grain, Sweet Clover silage is superior to any other forage for putting weight onto feeding steers; this is probably on account of the presence of *cumarin*, which seems to act as an intestinal and kidney corrective and keeps the animals in perfect health.

5. As an available and cheap forage crop for dairy cattle, Sweet Clover seems to fill the niche ideally, as there is no question about an unfailing Summer and Fall pasture the first season and early Spring pasturage the second season's growth; while as a milk producer, Sweet Clover is the equal of any other forage crop, if not the best.

6. As a soil builder, either as a humus producer or as a nitrogen gatherer, Sweet Clover has no peer. It is well-known that Sweet Clover thrives only where the soil is inoculated with the nitrogen gathering bacteria. The root system of Sweet Clover,

which dies naturally every two years, and which penetrates the soil to great depths, containing, as we know, a high percentage of protein and carbohydrates, produces great quantities of humus. The disintegration of the roots is very rapid. It is claimed, also, that the roots of Sweet Clover lift potash from depths beyond the reach of ordinary crop plants. As a green manure, if, indeed, one could bring himself to plow under such a valuable forage plant, Sweet Clover surpasses any other legume, on account of the prodigious yield per acre. Sweet Clover can be grown upon the poorest kind of soil and be made to build up such soil to a standard of average crop producing land.

7. As a rotation crop, Sweet Clover is the ideal plant, for the reason that it is a biennial and thereby makes it convenient if not compulsory, to rotate the crop every two years, with a very valuable by-product crop of pasturage or silage the first year, and two crops the second year, viz: either two months early pasturage in the Spring or a crop of hay or silage about the first of June, and a seed crop in the Fall together with a large crop of straw which can be fed as roughage or put into the silo. By this system of rotation the land is fertilized automatically and effectively every few years.

8. Throughout the Central States the land is usually deficient in lime. The lack of lime in the soil is more likely to be overlooked than that of any other necessary soil ingredient. It is one of the least expensive of all commercial products supplied to the soil, and perhaps the most neglected. To raise Sweet Clover successfully there must be an abundance of lime in the soil. The farmer who raises Sweet Clover, either as a feed crop or as green manure, will naturally be compelled to see to it that his land contains sufficient lime; thus, indirectly, Sweet Clover induces him to do what he otherwise may have failed to do, no matter how badly his land is in need of lime. The lime not utilized by the Sweet Clover will add to the productiveness of the land for any crops following.

9. To recapitulate: I have found Sweet Clover to be the most certain of all legume crops; to be the best conditioner for feeder steers; to be the best substitute in cutting the grain ration for fattening cattle; to be the most available and the cheapest dairy stock forage; to be the most ideal and practical rotation crop; and to be the one prolific crop that can be grown as

a by-product without either harming the nurse crop or impoverishing the land.

10. When the farmers have learned that Sweet Clover is not a "noxious weed" and begin to utilize it along the lines that my experience has taught me it can be utilized, then, and not until then, will the cry for feed, feed and more feed, at less cost, be truly realized. When beef and milk can be produced in the Great Corn Belt as a *by-product*, then will both the producer and the consumer feel that he has come into his own.

REPORT OF ASSOCIATION'S COOPERATIVE EXPERIMENTAL WORK 1917

H. W. ALBERTZ.

Sweet Clover Experiments

Seeded Spring of 1917.

Reported Fall of 1917.

The object of this experiment was to determine the advantages and disadvantages of different methods of seeding and the sources of difficulties, if any were experienced by the members.

The total number of members reporting were twenty-two, representing twenty different counties.

The methods of seeding used were as follows:

1. Hulled seed sown on fall grain.
2. Hulled seed sown with spring grain.
3. Hulled seed sown without a nurse crop.
4. Unhulled seed sown early.

Reports were received from members in twenty different counties in the state. Owing to an unfavorable year, very few secured a good stand. Several report that the stand was good until July and August. After the dry weather, much of it was killed out.

Seed sown on fall grain.

Four members reported as follows:

Good stand.

Hardly grew at all.

Fair stand.

Very uneven stand. Plowed it up.

Hulled seed sown with spring grain.

Thirteen members reported:

2 report fair stand.

11 report poor stand.

Hulled seed sown without nurse crop.

Two members reported:

15 inches. Good stand.

10 inches. Fair stand.

Unhulled seed sown early.

Seven members reported:

5 reported good stand.

1 reported poor stand.

1 reported failure.

Poor stands were reported on acid soils.

From the reports received this year it seems the best stand may be secured by sowing sweet clover early, preferably when some snow is still on the ground, with a winter grain as a nurse crop.

The reason for the better growth seems to be that the freezing and thawing in the early spring causes the extremely hard sweet clover seeds to germinate more quickly when the warm weather comes and thus gives it a good opportunity to make a rapid growth in the early summer.

The following extracts from the members' reports will show the results with last year's experiments:

Billie Johnson, Strong Prairie, Adams Co.

Sweet clover was a complete failure. The land was not limed nor inoculated.

Robert J. Plenty, Rice Lake, Barron Co.

It came through the summer quite well but was rather yellow in color.

Adam Holzschuh, So. Kaukauna, Brown Co.

Rape and sweet clover were sown for hog pasture. It grew over the rape until the dry weather set in, then it discontinued to grow.

A. J. Veith, Sun Prairie, Dane Co.

Did not inoculate. Stand is very thin. Good stand of medium red clover in a field adjacent to sweet clover.

Andres Bergum, De Forest, Dane Co.

Land was too loose for sweet clover. Barley lodged. Medium clover comes fine.

H. E. Krueger, Beaver Dam, Dodge Co.

Good stand with oats as nurse crop.

Roy McDonald, Menomonie, Dunn Co.

I had no difficulty in securing a stand this year or last year. I am confident that sweet clover will grow here. I planted a small plot of sweet clover about August 10th last year (1916). It grew to be 8 inches high in fall, wintered well and were the first plants up high enough for pasture in the spring. Cut the crop for hay in June. Crop was spoiled by rain. Second crop was cut for seed. Pods did not seem to be well filled.

Jos. A. Brunker, Ridgeway, Iowa Co.

Sown with barley as nurse crop. Grew to be 12 inches high in fall.

Frank F. Prochnow, Luxemburg, Kewaunee Co.

Sown in spring on winter wheat. Too dry. Did not grow after wheat was cut.

H. W. Whitehead, Rockland, La Crosse Co.

Fair stand, 8 to 12 inches high.

Walter Reich, Irma, Lincoln Co.

Hardly any sweet clover to be seen after the oats were cut.

Arthur Rusa, Ringle, Marathon Co.

Stand fair.

W. J. Niven, Dunbar, Marinette Co.

Tried several methods of seeding. Secured best results if sown early on winter grain.

F. D. Bailey, Prescott, Pierce Co.

Poor stand due to drought and weeds. Rye was not a good crop on this plot either.

Harold Frost, Almond, Portage Co.

Stand thin. Soil not inoculated and slightly acid. Alsike clover did not do well on strip along side of sweet clover, although alsike caught better.

O. Q. Chambers, Union Grove, Racine Co.

Sown on winter rye after snow was gone. Came through summer good. Pastured.

F. B. Jones, Deer Park, St. Croix Co.

Good growth till hot weather during July and August.

Fay Bros., New Richmond, St. Croix Co.

Hot weather during summer did not affect it very much. Cut a crop of hay and tried the second crop for seed. Early frost injured the seed. We do not like the hay as it is too coarse.

Hugo E. Wunsch, R. 1, Sheboygan, Sheboygan Co.

Dry weather did not affect it much. Stand looks O. K. Charles Ellickson, Wautoma, Waushara Co.

Dry weather did not affect stand sown with oats as nurse crop. About 7 inches high and quite thick. Unhulled seed sown on snow did not grow.

REPORT ON SWEET CLOVER—1917.
Seeded in Spring of 1916.

Number of report	SURVIVED WINTER			PASTURE		HAY		Remarks
	Good	Poor	Winter killed	When	What on it	Did they like it	No. of cuttings Tons per acre	Seed yield per acre
1	+	—	—	Fall	Cows	+	1	5 ft. tall; thick; no 2nd crop.
2	+	—	—	—	—	—	—	N. G.
3	+	—	—	—	—	—	—	Came up fine; wind storm took it.
4	+	—	—	—	—	—	—	Neither pasture nor hay; tried to improve sand; good.
5	—	+	—	—	—	—	—	Poor stand; not worth cutting.
6	—	+	—	—	—	—	—	Does not amount to much.
7	—	+	—	—	Calves	Fairly well	2	Not pastured; cannot compete with clover and alfalfa.
8	—	—	—	—	—	—	1	Did well on brush pile ashes.
9	—	—	—	—	—	—	1	No second crop.
10	—	—	—	—	—	—	3	Weedy after first cutting.
11	—	—	—	—	—	—	—	Wants to get it started in out of way places.
12	—	—	—	Fall	2 sows	Very well	1	Too coarse for hay; heavy yielder.
13	—	—	—	Aug. 15	Cows	Good	4	Winter severe so clover crops were failure.
14	—	—	—	—	Hogs	—	—	Thinks alfalfa pasture better if good stand.
15	—	—	—	—	—	Yes, before course	—	spring if kept down by cutting.
16	—	—	—	Started May 15	Sheep & swine	Fairly well	—	Fair stand. Will try to cut and make hay of it next year.
17	—	—	—	Oct. 1	Cattle	—	1	Does not do well.
18	—	—	—	—	—	—	—	—
19	—	—	—	—	—	—	—	Nurse crop not cut early enough. Lodged bad so not worth leaving and plowed under.
20	—	—	—	—	—	—	—	Not fed any hay; good stand—14' high; sweet clover stalk 6' 8" high.
21	—	—	—	—	—	—	1.5	Likes Alfalfa better—not so coarse.
22	—	—	—	—	—	—	2	No second crop—cut too late.
23	—	—	—	—	—	—	3.5	Came fine second year.
24	—	—	—	—	—	—	1	Thinks it great for sandy land. Let it stand.
25	—	—	—	—	—	—	—	Died after first cutting.
26	—	—	—	—	—	—	1	Got too hard.
27	—	—	—	6" tall	Hogs	—	2	Alfalfa better; should be mixed with other grasses.
28	—	—	—	—	—	—	1	Sold farm; owner ploughed up field.
29	—	—	—	—	—	—	—	Not equal to clover or alfalfa.
30	—	—	—	May 1	Hogs	—	1	Does not amount to much.
31	—	—	—	—	Cattle	No	1	Poor stand; what survived put up for hay; cattle liked it.

Reports from members of Experiment Association on the yields of Pedigree grains grown in 1917.

PEDIGREE BARLEY

Number of members reporting.....	202
Average yield Pedigree Barley.....bu.	36.9
Average yield other varieties in Wis.....	33.8
Difference in favor of Pedigree Barley.....	3.1

PEDIGREE OATS

Number of members reporting.....	185
Average yield Pedigree No. 1 Oats.....bu.	53.4
" " " No. 5 Oats.....	47.5
" " Sixty Day Oats.....	55.3
" " of all Pedigree Oats.....	52.1
" " other varieties Oats.....	46.9
Difference in favor of Pedigree Oats.....	5.2

PEDIGREE RYE

Number of members reporting.....	50
Average yield of Pedigree Rye.....bu.	27.0
Practically no other varieties now grown by members.	

CORN

Number of members reporting.....	114
Average yield of No. 7 corn.....bu.	41.9
" " " " 12 ".....bu.	46.8
" " " " 8 ".....bu.	42.7

The average yields of corn were obtained from members reporting corn yields. The majority of members reported no yields whatever because the corn did not mature. It will be noted that the average yield of No. 7 corn was low, due to early frosts.

WHEAT

Number of members reporting Winter Wheat.....	69
Number of members reporting Spring Wheat.....	115
Average yield of Winter Wheat.....bu.	24.9
" " " Spring Wheat.....bu.	23.0
Difference in favor of Winter Wheat.....	1.9

STATE HIGH SCHOOL CORN JUDGING CONTEST

HELD AT THE COLLEGE OF AGRICULTURE
FEBRUARY 9, 1918.

Agriculture is now being taught in over one hundred high schools in the State of Wisconsin by thoroughly trained college and normal graduates. The high school has for many years been promoting friendly contests of an athletic, declamatory or oratorical nature, but only recently has there been anything attempted in the line of contest in vocational subjects. It is now becoming a common thing to hold garden contests, stock-judging contests, or girls' canning contests, not only within the individual school, but also between schools of a county or section of the state. Not until the past year, however, has there been attempted a state-wide corn judging contest where the winning teams of the several sections of the state could be brought together for a "tryout of brains" in selecting good seed corn. This event was staged last winter by the Wisconsin Experiment Association in conjunction with the Annual Live Stock Judging Contest, Mr. T. L. Bewick, State Leader of Boys' and Girls' Clubs, being in charge and assisted by Professor R. A. Moore and his able force of assistants. The contest was a decided success and received very favorable comments from members of the Association. It will be continued another year with probably added features.

The holding of the contest during the time of the Annual Meeting of the Association affords a great opportunity for these boys to see the best grain exhibit the state can put up. Specially conducted excursions through the exhibit rooms were a part of last year's program, together with lectures and discussions on the judging of grains.

The contest proved to be very close and a number of expert corn judges were discovered. The decision of the judges announced at the final meeting by Professor Moore was the crowning feature of the contest. From among the fifty boys who took part, the winners were asked to stand, amid the cheers of their fellow contestants. A silver cup, together with other valuable prizes, was offered by the Association, and the following is a list of the winners and their score as graded by the judges.



THE CHAMPION TEAM

TEAM PRIZES

	School	Score	Prize
1st Team—	Marinette County School of Agriculture	2212	Silver Cup
2nd Team—	Milwaukee County School of Agriculture	2175	\$5.00
3rd Team—	Walworth High School.....	2135	Honorable mention

INDIVIDUAL PRIZES

	School	Score	Prize
1st Prize—	Edmund Lindow, Plymouth, Wis. Plymouth High School.....	877	\$5.00
2nd Prize—	Rexford Crothers, Kilbourn, Wis. Kilbourn High School.....	834	\$3.00

The next ten prizes consisted of enough corn to plant one acre.

1. Vilas Suttle, Onalaska, Wis.—La Crosse County School of Agriculture.
2. Harry Treleven, Omro, Wis.—Omro High School.
3. Earl Fahland, Frederick, Wis. Frederick High School.
4. Ernest Heggstad, Blanchardville, Wis.—Blanchardville High School.

5. R. Klussendorf, Wauwatosa, Wis.—Milwaukee Co. School of Agriculture.

6. H. Loomis, Marinette, Wis.—Marinette County School of Agriculture.

7. Geo. Levy, Wauwatosa, Wis.—Milwaukee County School of Agriculture.

8. Bert Schrader, Omro, Wis.—Omro High School.

9. Walter Schawbe, Walworth, Wis.—Walworth High School.

10. Emil Jensen, Marinette, Wis.—Marinette Co. School of Agriculture.

CONSTITUTION AND BY-LAWS OF THE COUNTY ORDERS OF THE WISCONSIN AGRICULTURAL EXPERIMENT ASSOCIATION

Article I—Name. The organization shall be known as the
.....County Order of the Wisconsin Experiment Association.

Article II.—Object. The object of this organization shall be to promote the agricultural interests of the County and State in general.

1st. By cooperating with the Experiment Association in growing and disseminating pure bred seed grains.

2nd. By having Associations' exhibits at agricultural fairs.

3rd. By having annual meetings in order to report and discuss topics beneficial to the members of the Order.

Article III—Membership. 1. Any person may become a member of this Order who has taken a course in the College of Agriculture at Madison or at any place in the State under the jurisdiction of the College.

2. Any one who is interested in pure bred grains and live stock or in progressive farming in general may become a member of this Order.

3. Honorary membership may be conferred upon anyone interested in progressive agriculture by a majority vote at any annual or special meeting.

Article IV.—Dues. A fee of fifty cents shall be collected from each member annually.

Article V—Officers. The officers of this Order shall consist of a President, Vice President and Secretary-Treasurer, whose terms of office shall be one year, or until their successors are elected.

Article VI—Duties of Officers. 1. It shall be the duty of the President to preside at all meetings of the Order and to enforce the observance of such rules and regulations as will be for the best interest of the organization; to appoint all regular committees as he may deem expedient for the welfare of the Order.

2. In the absence of the President, the Vice President shall preside and perform the duties of the President.

3. The Secretary-Treasurer shall keep the records of all meetings and proceedings of the Order, also the names of all members and their addresses. He shall also keep the funds of the Order, collect all fees, pay all debts, and shall submit a written statement of all moneys received and paid out by him and shall balance his books not later than one month before the annual meeting.

Article VII—Disbursements. The funds of the Order shall be used to defray expenses or by vote of the Order for such purposes as will advance the agricultural interests of the Order and shall be paid out only upon an order signed by the President and countersigned by the Secretary.

Article VIII—Amendments. This constitution may be amended at any meeting, by a two-thirds vote of the members of the Order present.

BY-LAWS

Article I—The officers of this Order shall be elected by ballot at the annual meeting.

Article II—This Order shall be governed by Roberts' Rules of Order.

Article III—All members joining at the organization of this Order shall be known as Charter Members.

Article IV—The time and place of holding the annual meeting shall be determined by the officers.

Adopted....., 19....

CONSTITUTION AND BY-LAWS OF THE TOWNSHIP AGRICULTURAL CLUBS

ARTICLE I. NAME

The organization shall be known as the (Name of township) Agricultural Club.

ARTICLE II. OBJECT

The object of this organization shall be to promote the agricultural interests of the town, county, and state.

1st. By cooperating with the County Order and State Experiment Association in growing and disseminating pure bred seed grains.

2nd. By having town and individual exhibits at County Fairs and other agricultural exhibitions.

3rd. By having at least one annual meeting and several special meetings in order to report and discuss topics beneficial to the members of the club.

4th. The special meetings should be social in character and the program shall consist of debates, discussions, readings, together with vocal and instrumental music.

ARTICLE III. MEMBERSHIP

1. Any person may become a member of this township club who is especially interested in agriculture.

2. Honorary membership may be conferred upon anyone interested in progressive agriculture by a majority vote at any annual or special meeting.

ARTICLE IV. DUES

A fee of twenty-five cents shall be collected from each member annually.

ARTICLE V. OFFICERS

The officers of this organization shall consist of a President, Vice President, and Secretary-Treasurer, whose term of office shall be one year, or until their successors are elected.

ARTICLE VI. DUTIES OF OFFICERS

1. It shall be the duty of the President to preside at all meetings of the club and to enforce the observation of such rules and regulations as will be for the best interest of the organization, to appoint all regular committees as he may deem expedient for the welfare of the Association.

2. In the absence of the President the Vice President shall preside and perform the duties of the President.

3. The Secretary-Treasurer shall keep the records of all meetings and proceedings of the club, also the names of all members and their addresses. He shall also keep the funds of the club, collect all fees, pay all debts, and shall submit a written statement of all moneys received and paid out by him and shall balance his books not later than one month before the annual meeting.

ARTICLE VII. DISBURSEMENTS

The funds of the club shall be used to defray its expenses or by vote of the club for such purposes as will advance the agricultural interests of the organization and shall be paid out only upon an order signed by the President and countersigned by the Secretary.

ARTICLE VIII. AMENDMENTS

This constitution may be amended at any meeting by a two-thirds vote of the members of the club present.

BY-LAWS

ARTICLE I.

The officers of this club shall be elected by ballot at the annual meeting.

ARTICLE II.

This club shall be governed by Roberts' Rules of Order. The Secretary shall report the organization of the club with names and addresses of officers to the Secretary of the county order and the Secretary of the state association immediately after organization and all changes annually in officers thereafter.

RESOLUTIONS

POTATO DESICCATING FACTORIES AND FLOUR PRODUCING MILLS

WHEREAS, recent reports of the Department of Agriculture and of the International Institute of Agriculture indicate the most serious shortages of most cereals. The amount on hand has not kept pace with the increase in population. To better this condition and save the flour producing cereals for our armies is our earnest aim. Through many tests it has been found that all articles of pastry can partially be made from potato flour, and there is no good reason why desiccated potatoes can not be used widespread in America as they are now used in Europe and thus save a large part of the crop which goes to waste annually. Therefore,

BE IT RESOLVED, that this Association recommend to the United States Government the establishment of potato flour and desiccating plants in a sufficient number of states to provide flour and dried potato products from this farm crop.

THE COMMON BARBERRY

WHEREAS, In view of the present urgent need for food grain production it is important that losses be prevented wherever possible. The great losses from grain rusts are well-known. Inasmuch as a large proportion of plant pathologists hold the common barberry to be a prolific source of trouble and so widespread as to call for their removal, and that additional plantings of the barberry should cease.

BE IT RESOLVED, that this association pledges its most serious consideration of this subject and immediate action to prevent by all practical means the extension of rust.

STANDARD SEED CORN VALUES

WHEREAS, numerous complaints have come to members of the Experiment Association of exorbitant prices charged for seed corn.

BE IT RESOLVED: that this Association in annual meeting assembled strongly condemn such practice on the part of seed growers or seed dealers. We feel there should not be an attempt to ask exorbitant prices for seed and take advantage of the situation at this trying time. Prices should be formulated on plans suggested by the Government on costs, plus ten per cent profit. We further feel keenly that costs to the planter may be fair and reasonable so that all may be able to increase the food output of the country.

Committee on Resolutions,

JAMES B. CHEESMAN, *Chairman*.

C. P. NORGORD,

HENRY E. KRUEGER.

COUNTY AGRICULTURAL ADVISERS

This Association records its strong appreciation of the work of County Agricultural Advisers: and urges their employment in a more extended territory as one of the most potent means of increasing the crop yields of Wisconsin.

SWEET CLOVER PLANT

The imperative needs of increased yields of animal products of all kinds invites the attention of every live stock grower to leguminous plants. In this species of fodder crops sweet clover claims a prominent place; and its recent crop records and work in the live stock field have proved it a most economic plant.

TREASURER'S REPORT

Peter C. Swartz, treasurer, reported on the financial condition of the association as follows:

Balance in association treasury, Feb. 11, 1917-----	\$ 480.35
Receipts, Feb. 11, 1917 to Feb. 8, 1918-----	1,559.73
<hr/>	
Total receipts on hand Feb. 8, 1918-----	\$2,040.08
Total disbursements Feb. 11, 1917 to Feb. 8, 1918---	880.09
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Balance in association treasury, Feb. 8, 1918-----	\$1,159.99

SECRETARY'S REPORT

R. A. Moore, secretary, reported on the use and condition of state funds. He reported as follows:

Balance in state treasury Feb. 11, 1917-----	\$2,558.34
State appropriation, July 1, 1917-----	5,000.00
<hr/>	
Total -----	\$7,558.34
Total disbursements, Feb. 11, 1917 to Feb. 8, 1918---	5,028.22
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Balance in state treasury Feb. 8, 1918-----	\$2,530.12

The itemized financial reports are on file for inspection in the office of the association.

PREMIUM AWARDS

AT ANNUAL PURE BRED GRAIN SHOW

Feb. 7-9, 1918

COLLEGE OF AGRICULTURE, MADISON, WIS.

- 10 Ears Silver King (Wisconsin No. 7) Corn, North Section
First—A. G. Ruemmele & Sons, Hudson
- 10 Ears Early Yellow Dent (Wisconsin No. 8) Corn, North Section
First—Fred Cisar, Oconto, R. 2
- 10 Ears Golden Glow (Wisconsin No. 12) Corn, North Section
First—A. G. Ruemmele & Sons, Hudson
Second—Wm. Ohlfs, Crivitz.
- 10 Ears (Wisconsin No. 25), Corn, North Section
First—C. A. Correll, Crivitz
Second—J. Carstens, Crivitz
- 10 Ears Silver King (Wisconsin No. 7) Corn, South Section
First—John Bendel, Stoddard, R. 1.
Second—Kaltenberg & Sons, Waunakee.
Third—Henry Lunz, Portage
Fourth—Walter J. Steinhoff, Platteville
Fifth—Jos. A. Brunker, Ridgeway
- 10 Ears Early Yellow Dent (Wisconsin No. 8) Corn, South Section
First—Lang Bros., Jefferson.
Second—H. E. Krueger, Beaver Dam
- 10 Ears Golden Glow (Wisconsin No. 12) Corn, South Section
First—H. T. Draheim, Gotham
Second—Jos. A. Brunker, Ridgeway
Third—Jippa Wielinga, Midway
Fourth—Frank Violet, Onalaska, R. 1.
Fifth—Lang Bros., Jefferson
- 10 Ears Clark's Yellow Dent (Wisconsin No. 1) Corn, Any Part of State
First—Elmer Biddick, Livingston
Second—H. E. Krueger, Beaver Dam
- 10 Ears Tools North Star (Wisconsin No. 11) Corn, Any Part of State
First—Noyes Raessler, Beloit
Second—H. E. Krueger, Beaver Dam

10 Ears Murdock (Wisconsin No. 13) Corn, Any Part of State

First—Noyes Raessler, Beloit
 Second—Leo Brueckner, Jefferson
 Third—Arthur O. Popp, Jefferson
 Fourth—W. E. Colladay, McFarland
 Fifth—Albert C. Wollin, Johnson Creek

10 Ears 8 Row Red, Yellow or Smut Nose Flint Corn, Any Part of State

First—H. E. Krueger, Beaver Dam
 Second—Albert C. Wollin, Johnson Creek
 Third—Harry Pralle, La Crosse, R. 3

10 Ears 8 Row White Flint Corn, Any Part of State

First—H. E. Krueger, Beaver Dam

10 Ears Pop Corn, Any Part of State

First—Wm. Moos, Onalaska, R. 1
 Second—H. T. Draheim, Gotham
 Third—Garrett Westerhouse, Onalaska
 Fourth—Arthur O. Popp, Jefferson.

Single Ear Dent Corn, Any Variety, Any Part of State

First—Frederick Hoffman, Holmen
 Second—H. T. Draheim, Gotham
 Third—Jos. A. Brunker, Ridgeway
 Fourth—J. Emmett Brunker, Ridgeway
 Fifth—Arthur O. Popp, Jefferson

50 ears Silver King (Wisconsin No. 7) Corn, Any Part of State

First—J. R. Thorpe, Beloit, R. 29
 Second—Otto Wolfe, La Crosse
 Third—Ed. Peters, La Crosse, R. 2
 Fourth—O. J. Emmert, Johnson Creek
 Fifth—John Bendel, Stoddard, R. 1

50 Ears Golden Glow (Wisconsin No. 12) Corn, Any Part of State

First—Jos. A. Brunker, Ridgeway
 Second—Noyes Raessler, Beloit
 Third—John Van Loon, La Crosse
 Fourth—Otto Wolfe, La Crosse, R. 2
 Fifth—Jippa Wielinga, Midway

Peck of Wisconsin Pedigree or Oderbrucker Barley

First—Minnie L. Krueger, Beaver Dam
 Second—R. Kressin, Cedarburg
 Third—Noyes Raessler, Beloit
 Fourth—Adam Holzschuh, So. Kaukauna, R. 14.
 Fifth—Wm. J. Clemmens, Kansasville

Peck Two Row Barley

First—H. E. Krueger, Beaver Dam

Peck Wisconsin Pedigree No. 1 Oats

First—Albert Baumgartner, Wrightstown
 Second—Frank J. Gaspar, Rockland
 Third—Morrisey Bros., Arena
 Fourth—Adam Holzschuh, So. Kaukauna, R. 14
 Fifth—J. L. Krause, Beaver Dam

Peck Pedigree No. 5 or Swedish Select Oats (Wisconsin No. 4)

First—Minnie L. Krueger, Beaver Dam
Second—Frank J. Gasper, Rockland
Third—Chas. J. Nieman, Cedarburg
Fourth—H. W. Whitehead, Rockland
Fifth—Ed. Peters, La Crosse, R. 2.

Peck Pherson or Sixty Day Oats

First—H. T. Draheim, Gotham
Second—Peter Dengel, La Crosse, R. 1
Third—J. L. Krause, Beaver Dam
Fourth—Lang Bros., Jefferson
Fifth—H. E. Krueger, Beaver Dam

Peck Any Other Variety of Oats

First—W. E. Colladay, McFarland
Second—Herman Schoeneck, Enterprise
Third—De Witt Damp, Dane
Fourth—Joseph Waski, Stevens Point
Fifth—Albert C. Wollin, Johnson Creek

Peck Winter Wheat

First—Arthur O. Popp, Jefferson
Second—Joa. A. Bruncker, Ridgeway
Third—Gilbert Jaeger, Ixonia
Fourth—J. Emmett Bruncker, Ridgeway
Fifth—Albert Meyer, Beaver Dam

Peck Spring Wheat

First—Minnie L. Krueger, Beaver Dam
Second—Chris Michelson, Hazelhurst
Third—Edgar Huebbe, Beloit
Fourth—Julius Brue, De Forest
Fifth—W. W. Winter, Eau Claire

Peck Wisconsin Pedigree Winter Rye

First—Arthur O. Popp, Jefferson
Second—R. Kressin, Cedarburg, R. 2
Third—Geo. H. Leonard, Jefferson, R. 1
Fourth—Fred Sweniger, Peshtigo
Fifth—Fred Rebensdorf, Fairchild

Peck Medium Red Clover Seed

First—Fay Brothers, New Richmond
Second—Adam Holzschuh, So. Kaukauna, R. 14
Third—Fred Cisar, Oconto, R. 2
Fourth—O. J. Emmert, Johnsons Creek
Fifth—J. Emmet Bruncker, Ridgeway

Peck Mammoth Clover Seed

First—J. L. Krause, Beaver Dam
Second—A. G. Ruemmele & Sons, Hudson
Third—Stanley Seblon, Westby
Fourth—Selmer Oberson, Westby
Fifth—P. S. Graham, Fennimore

Peck Alsike Clover Seed

First—Joe Haight, Madison, R. 4
Second—H. C. Hansen, Spooner
Third—Otto Wolfe, La Crosse, R. 2
Fourth—Geo. H. Leonard, R. 1, Jefferson
Fifth—Julius Brue, De Forest

Peck Timothy Seed

- First—P. S. Graham, Fennimore
Second—Adam Holzschuh, So. Kaukauna, R. 14
Third—Peter Trapp, Columbus
Fourth—A. G. Ruemmele & Sons, Hudson

Peck Alfalfa Seed

(No entries)

Peck Silver Hull Buckwheat

- First—H. E. Krueger, Beaver Dam
Second—Frank J. Gasper, Rockland
Third—H. E. Parsons, Crivitz

Peck Japanese Buckwheat

- First—H. T. Draheim, Gotham
Second—H. E. Krueger, Beaver Dam
Third—J. L. Krause, Beaver Dam

Peck Black Soy Beans

- First—Emil Jensen, Athelstane
Second—Geo. Batty, Poynette
Third—Albert Dettman, Marinette, R. 1
Fourth—Henry Lunz, Portage
Fifth—H. E. Parsons, Crivitz

Peck Green Soy Beans

(No entries)

Peck Yellow Soy Beans

- First—H. T. Draheim, Gotham
Second—Garrett Westerhouse, Onalaska
Third—Wm. J. Clemmens, Kansasville
Fourth—R. Kressin, Cedarburg, R. 2

Peck Smooth or Wrinkled Peas

- First—Chas. J. Nieman, Cedarburg
Second—Wm. R. Leonard, Jefferson, R. 1
Third—Herman Schoeneck, Enterprise
Fourth—H. E. Krueger, Beaver Dam

Peck Green or Yellow Field Peas

- First—Herman Schoeneck, Enterprise
Second—Max Groy, Pembine
Third—Fred Sweniger, Peshtigo
Fourth—Fay Bros., New Richmond
Fifth—A. G. Ruemmele & Sons, Hudson

Sheaf Pedigree or Oderbrucker Barley

- First—H. T. Draheim, Gotham
Second—Otto Wolfe, La Crosse, R. 2
Third—H. E. Krueger, Beaver Dam
Fourth—Lang Bros., Jefferson
Fifth—Ed. Peters, La Crosse, R. 2

Sheaf Two Row Barley

- First—H. T. Draheim, Gotham
Second—Herman Schoeneck, Enterprise
Third—Joseph Waski, Stevens Point

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Sheaf Pedigree No. 1 Oats

- First—H. T. Draheim, Gotham.
- Second—H. E. Krueger, Beaver Dam
- Third—Wm. Moos, Onalaska, R. 1
- Fourth—Otto Wolfe, La Crosse, R. 2
- Fifth—J. L. Krause, Beaver Dam

Sheaf Swedish Select or Any Other Variety Oats

- First—Ed. Peters, La Crosse, R. 2
- Second—Wm. Moos, Onalaska, R. 1
- Third—J. L. Krause, Beaver Dam
- Fourth—Otto Wolfe, La Crosse, R. 2
- Fifth—H. E. Krueger, Beaver Dam

Sheaf Winter Wheat

- First—Minnie L. Krueger, Beaver Dam
- Second—Noyes Raessler, Beloit
- Third—Lang Bros., Jefferson
- Fourth—H. E. Krueger, Beaver Dam.
- Fifth—J. L. Krause, Beaver Dam

Sheaf Spring Wheat

- First—Wm. Moos, Onalaska, R. 1
- Second—J. L. Krause, Beaver Dam
- Third—A. G. Ruemmele & Sons, Hudson
- Fourth—Noyes Raessler, Beloit
- Fifth—Ed. Peters, La Crosse, R. 2

Sheaf Pedigree Rye

- First—Otto Wolfe, La Crosse, R. 2
- Second—Arthur O. Popp, Jefferson
- Third—H. E. Krueger, Beaver Dam
- Fourth—Noyes Raessler, Beloit
- Fifth—Ed. Peters, La Crosse, R. 2

Bundle of Alfalfa

- First—John Hesprich, Lomira
- Second—Wm. Moos, Onalaska
- Third—Hiram Michels, Peebles
- Fourth—Arthur O. Popp, Jefferson
- Fifth—H. E. Krueger, Beaver Dam

Best Exhibit of three cuttings of Alfalfa

- First—Arthur O. Popp, Jefferson
- Second—H. E. Krueger, Beaver Dam
- Third—Wm. Moos, Onalaska, R. 1
- Fourth—Stanley Seblon, Westby

Bundle of Red Clover

- First—H. T. Draheim, Gotham
- Second—Walter J. Steinhoff, Platteville
- Third—J. L. Krause, Beaver Dam
- Fourth—Wm. Moos, Onalaska
- Fifth—Wm. J. Clemmens, Kansasville

Bundle of Mammoth Clover

- First—Stanley Seblon, Westby
- Second—H. E. Krueger, Beaver Dam

Bundle of Alsike Clover

- First—H. T. Draheim, Gotham
- Second—Wm. Moos, Onalaska, R. 1
- Third—J. L. Krause, Beaver Dam
- Fourth—Lang Bros., Jefferson
- Fifth—H. E. Krueger, Beaver Dam

Bundle of Timothy

- First—H. T. Draheim, Gotham
- Second—Wm. Moos, Onalaska, R. 1
- Third—J. L. Krause, Beaver Dam
- Fourth—Arthur O. Popp, Jefferson
- Fifth—Walter J. Steinhoff, Platteville

Bundle of Sudan Grass

- First—H. T. Draheim, Gotham
- Second—J. L. Krause, Beaver Dam
- Third—H. E. Krueger, Beaver Dam

Bundle of Soy Beans

- First—Minnie L. Krueger, Beaver Dam
- Second—Otto Wolfe, La Crosse, R. 2
- Third—H. E. Krueger, Beaver Dam
- Fourth—Herman Schoeneck, Enterprise
- Fifth—Harry Pralle, La Crosse, R. 3

HONORARY CLASSES**10 Ears Clark's Yellow Dent (Wisconsin No. 1) Corn**

- First—H. T. Draheim, Gotham
- Second—J. R. Thorpe, Beloit, R. 29

10 Ears Silver King (Wisconsin No. 7) Corn

- First—J. R. Thorpe, Beloit, R. 29

10 Ears Early Yellow Dent (Wisconsin No. 8,) Corn

- First—Noyes Raessler, Beloit
- Second—John Van Loon, La Crosse

10 Ears Golden Glow (Wisconsin No. 12) Corn

- First—J. Emmett Brunker, Ridgeway
- Second—Noyes Raessler, Beloit
- Third—John Van Loon, La Crosse

10 Ears Any Variety 8 Row Flint Corn

- First—H. T. Draheim, Gotham
- Second—Arthur O. Popp, Jefferson

Peck Pedigree or Oderbrucker Barley

- First—H. E. Krueger, Beaver Dam
- Second—Adam Holzschuh, So. Kaukauna, R. 14

Peck Pedigree No. 1 Oats

- First—H. T. Draheim, Gotham
- Second—Noyes Raessler, Beloit

Peck Pedigree No. 5 or Swedish Select Oats

First—H. T. Draheim, Gotham

Second—Chris. Michelson, Hazelhurst

Peck Winter Wheat

First—J. L. Krause, Beaver Dam

Second—H. E. Krueger, Beaver Dam

Third—Noyes Raessler, Beloit

Peck Spring Wheat

First—H. E. Krueger, Beaver Dam

Peck Pedigree Rye

First—Noyes Raessler, Beloit

Second—Edward Whitmore, Wausau, R. 2

Third—H. E. Krueger, Beaver Dam

SWEEPSTAKES CLASS

Best Peck Spring Wheat

First—Minnie L. Krueger, Beaver Dam

Best Peck Pedigree Rye

First—Noyes Raessler, Beloit

Best Peck Wisconsin Pedigree No. 1, Oats

First—H. T. Draheim, Gotham

Best Peck Wisconsin Pedigree No. 5 Oats

First—Minnie L. Krueger, Beaver Dam

Best Peck Wisconsin Pedigree Barley

First—Minnie L. Krueger, Beaver Dam

Best 10 Ears Silver King Corn of entire Show

First—J. R. Thorpe, Beloit, R. 29

Best 10 Ears Yellow Dent Corn of entire Show

First—H. T. Draheim, Gotham

Best 50 Ears Silver King Corn

First—J. R. Thorpe, Beloit, R. 29

Grand Champion 10 Ears Dent Corn of Entire Show

First—H. T. Draheim, Gotham

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County Orders which have been organized since the last annual report was issued:—

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Secretary-Treasurer—Lewis P. Hanson, Mauston.

Alfalfa Session

PRESIDENT'S ADDRESS

PETER C. SWARTZ, Waukesha.

Members of the Alfalfa Order:

I heartily welcome you all to this annual meeting, and I hope it may not only entertain you but inspire you to greater zeal and efficiency in starting and growing more alfalfa in this great Badger State. You may ask why it is so essential to grow more alfalfa when it is a known fact that the world's granary bin will be swept clean before the new crop is harvested. Scores of things point to alfalfa as the foremost, essential and patriotic crop for Badger farmers to adopt and grow. Every new idea or thing like alfalfa that has benefited the world has to fight through three battles for its life. First, long we ridicule. Second, we discuss. Third, we adopt. It gives me great pleasure to announce at this time that alfalfa has won its fight in these three battles here in Wisconsin and we have adopted it. I am going to persuade you to grow more alfalfa, but it seems to me more like offering you gold nuggets and then begging you to accept them. Wisconsin is known the world over as a great dairy state. Why? Simply because we have turned towards dairying and put all our aim and efforts towards the dairy cow. We have adopted her as a co-worker on our farms. We have studied her from the tip of her horns to the last hair in her tail. We have so thoroughly studied her makeup so that by the looks of her head, body, milk veins, and udder, we can nearly tell whether she is a good cow or not. We have studied her farther than that. We now know her ancestors by heart for twenty-five years back. We have built splendid homes for her, equipped these homes with the latest conveniences, carpeted the floors and polished the ceilings and every day have given her

a manicuring and shampooing from head to foot. In many cases we are now testing her out and humanity is living with her in her stable, stuffing her for five hours and every sixth hour milking; yes, in many barns cows are milked three and four times every twenty-four hours. Every detail about the dairy cow has been so closely studied through farm papers and our Agricultural College—talked, argued, and discussed at Farmers' Institutes. The dairy cow tells us and shows us that the corn crop canned and dished out as silage is one of the best breakfast foods. Silage is not a balanced ration. The milk pail tells us that a homemade "sandwich" of alfalfa hay and corn silage makes a balanced ration. Thousands of farmers in Wisconsin have the dairy cows and the silos, but only a few have enough home grown alfalfa to make these "sandwiches." Wisconsin is the greatest dairy state in the Union and has over 1,500,000 dairy cows within its borders. In 1917 we raised only one ton of alfalfa hay to every seven dairy cows or four tons of alfalfa to every silo. We raised 15 tons of clover and timothy to every ton of alfalfa. Good clover hay with silage makes a fair sandwich, but timothy hay makes a poor sandwich and your stock soon shows what kind of sandwiches you are feeding them.

These figures and rations are amazing. Something must be done at once. I now realize why our mail at Cornalfalfa Farms is loaded down with so many inquiries for alfalfa hay, reading something like this: "I need 75 tons of alfalfa hay and my neighbors can use ten times that amount. How much can you furnish or where can we get this alfalfa hay?" Why do we face an alfalfa shortage? We have the people and soil but we have not adopted alfalfa as a co-worker. The alfalfa plant can be made to grow on every farm. What we need to know is how to grow and take care of it. Every farmer who is interested in growing alfalfa should join the Alfalfa Order and secure the eighty page booklet which this Order has just issued. It tells the plain truth about alfalfa in both story and pictures in such a way that everyone will understand. The time has come when no more free land can be grabbed and we must dig deeper for the fertility that lies underneath our farms. This reminds me of Ben Franklin's maxim:

Plow deep while sluggards sleep,
And you will have corn to sell and keep.

And I say the new proverb should read:

Plow deep while slackers sleep,
And we will soon have the Kaiser beat.

The world has turned toward America to plead for help in order to save its people from the ravages of militarism. We have entered this terrible world-wide war with the determination never to let up until we have accomplished our aim in forever abolishing militarism. American agriculture must supply enough food not only for our armies, but also for the armies of our Allies. That means larger yields on every farm, and larger yields means better farming. The Badger farmers can produce the highest yields and standards of foodstuffs in the least possible time by playing the alfalfa game correctly.

The things that alfalfa does for us on Cornalfalfa Farms it will do anywhere in Wisconsin if you adopt the slogan we did years ago: "Get engaged to alfalfa," and soon you will be the proud owners of two and three crops of alfalfa a year. Alfalfa in the summer time is like milling bran in a flour mill. It gives us more and better feed and that means stock will be in better condition. Our markets call for the best quality of all kinds of live stock. It is essential that the cost of production be reduced to the lowest point and no other feed with a high protein content can be produced as cheaply as alfalfa. This crop is worth all you can get for it, but it gives the best returns if fed to live stock on the farm. A combination of corn silage and alfalfa hay forms a feeding stuff for dairy cows which cannot be excelled by any other feed. It increases the rapidity of growth in young animals and insures a greater milk production. Alfalfa speeds up everything we must produce quickly. It is simply a problem of addition: "More alfalfa, more production."

We have on our program Mr. Fred Hatch from Spring Grove, Illinois, who has had many years of experience in growing alfalfa and who will discuss in detail the methods used in growing alfalfa successfully.

Before closing, I wish to call your attention again to the alfalfa booklet which has just been issued. Follow its instructions and you will have no difficulty in getting a good stand and raising several crops of alfalfa each year. This booklet should be in the hands of every alfalfa grower in Wisconsin.

MORE AND BETTER FEED FROM FEWER ACRES

L. F. GRABER, Secretary Alfalfa Order

It is a pleasure to come before you again at this—our sixth annual meeting. We organized in 1911 to build on a permanent and lasting basis a great alfalfa industry in the state of Wisconsin. And for what purpose more worthy and for what cause, more patriotic, could an organization stand for in the light of the present crisis.

Alfalfa is our biggest and best feed producing hay and surely, the growing of more alfalfa where it can be produced successfully is true patriotism in the strictest sense of the word. If there is any crop, which we can call unpatriotic in a time like this, it is that soil robbing, that poor producing, feed-less crop, timothy. It is true, that timothy seldom winterkills and that there are conditions where timothy has its place but as a general proposition we cannot afford to fool around with a crop that produces so little, that gives us such meager returns for our labor and our effort as does timothy.

“MAKE EVERY SEED, EVERY SECOND AND EVERY CENT, COUNT”

David Rankin of Tarkio, Missouri, was the wealthiest farmer in the world. His motto has the same significance today as it did in making his career the wonderful success it proved to be. It was this: “Make every seed, every second and every cent count.” Are we making every seed, every cent and every second count when we use our high priced farm land, our high priced farm labor to grow and harvest such an inadequate feed as timothy hay?

We may say it requires more labor to grow and harvest alfalfa and labor is scarce. That is true. It does take more labor to

handle thirty acres of alfalfa than it does thirty acres of timothy. But there is another way of looking at it. Supposing to winter the stock on a farm has required fifty tons of timothy hay which was produced on thirty acres of land. Would it not be far more profitable, from the labor standpoint, to secure fifty tons of hay with alfalfa produced on only fifteen acres of that same land? If labor were scarce we could turn the remaining fifteen acres into pasture and it would be clear profit.

We are not making every second of our labor count when we put our high priced farm help at harvesting such an insufficient feed as timothy hay. It requires just as much time and effort to load a ton of alfalfa hay as it does a ton of timothy and when you haul a ton of alfalfa hay in your barn you have there twice the amount of feed and twice as good a feed for the same labor as would be required for a ton of timothy.

More feed from fewer acres is one way of solving the labor problem and increasing food production at the same time. Alfalfa hay which today is worth from \$30.00 and \$40.00 a ton—think of it—from one and a half to two cents a pound—surely with this crop we can “*make every seed, every cent and every second count.*”

WINTERKILLING PROBLEMS

Since our organization began we have bent our energies in a common sensed encouragement of more alfalfa growing in Wisconsin by enlisting the cooperative efforts of our members in solving those problems which have heretofore limited the alfalfa acreage of this state. And it has not all been “sunshine and roses”—for there are real problems in growing alfalfa which confront us today. Not the least of these is that of *winterkilling*. It has caused severe losses with both clover and alfalfa. Late fall cutting and pasturing have ruined many a good stand of alfalfa but even fields which were not pastured or cut late in the fall have succumbed to the rigors of severe alternate freezing and thawing winter and spring weather. Where this occurs there is only one solution of the difficulty—and that is to use only the seeds of the hardiest known varieties.

GRIMM MAKES SHOWING

Our Association has already distributed for experimental purposes to several hundred of our members, the Grimm variety of seed. One hundred five-pound samples of Grimm were sent out in 1916 for comparison with common alfalfa. While this test has so far passed through only one winter already visible evidences of the superiority of Grimm alfalfa have been reported by thirty-two farmers. Here are a few of the statements made.

Grimm is fine. Common is almost an absolute failure."

"Grimm plants are larger and stronger."

"Grimm has a dark, strong green color. The common is a light green. I can see difference 80 rods away."

But Grimm alfalfa is expensive. It costs from 40 to 50 cents a pound. This year we are going to try out a plan which may effectually reduce the price of Grimm alfalfa seed from ten to fifteen cents a pound without reducing its winter resistant qualities.

TRY OUT TURKESTAN IN MIXTURE

The plan is to mix the Grimm seed half and half with Turkestan. *Understand that we do not recommend this as a general practice for it is as yet in the experimental stage but we do recommend that every member of the Alfalfa Order who will seed alfalfa next year should try out at least a limited amount of pure GRIMM and a limited amount of a half and half mixture of Grimm and Turkestan along side of whatever other kind of alfalfa seed they may desire to sow. This is an experiment which requires no extra time or labor and that it is of vital importance we shall see.*

Where Turkestan Seed Comes From

Approximately one-fifth of the alfalfa seed sown in this country comes from abroad and of this quantity 95 per cent comes from Turkestan. Seed from Turkestan can be imported at a lower cost and price than seed from any other part of the world. In spite of its cheapness it has not been very popular in the middle West or Eastern states. The United States Department of Agriculture has not endorsed it. It is criticized because of its

tendency to produce a rather scant third crop and rarely a fourth crop.

In southern Illinois, Kentucky and other states with long seasons where alfalfa may produce four to six crops a year, it is said that Turkestan alfalfa seed because of its cheapness has been sold to farmers as Common American grown seed. When it produced only two good crops and a fair third crop instead of the four and five good crops they were accustomed to obtain, it resulted in a storm of protest through the agricultural papers which made Turkestan alfalfa very unpopular.

Our Experience With Turkestan

In 1913, we were offered ten thousand pounds of very fine, clean, high germinating Turkestan alfalfa seed at \$6.60 a bushel. Our Association was then buying Montana, Dakota, Nebraska and Kansas grown seed for experimental purposes. The Montana seed cost us \$10.50 a bushel. Our members wanted Montana so we bought it. We turned down the cheaper Turkestan because of the unfavorable reports we had read and particularly the warnings of the United States Department of Agriculture on imported seed.

However, we bought a few pounds to include it in our experimental plots. Here we met a real surprise. The Turkestan plot came through the first winter in excellent shape as did the Montana, Kansas, Dakota, Nebraska, Grimm and Baltic plots seeded at the same time. Yields of the first two cuttings of Turkestan were somewhat higher than the common Western grown strains but the third crop was much shorter and yielded less hay than the others. In spite of abundant fall rains the Turkestan only grew an inch or two after the third cutting and soon turned brown while the Montana and other common varieties made a green fall growth of eight to ten inches.

As we will all remember, the winter of 1915-1916 was very severe and resulted in a most serious winterkilling of alfalfa and clover fields known in this and other states. Much to our surprise the Turkestan plot come through this severe winter without any serious injury and was almost as good a stand as the Grimm while the Montana plots killed out from 40 to 76 per cent. This, to us, was remarkable. The seed which we could have bought at \$6.60 a bushel proved much hardier than the higher priced Montana strains.

A Farmer's Experience With Turkestan

I was on the farm of Mr. Fred Dettwiler of Monroe, Wisconsin last July. He took me to an alfalfa field of about ten acres which was six years old. Up to a certain point on one side, the alfalfa had been practically all killed out last winter and was mostly blue grass. The remainder of the field came through in good shape.

"What makes the difference?" he asked me. "I don't know" I replied, "but did you use the same kind of seed for the entire field." "Yes, I did," he asserted, "but the part which has killed out was sown with some Montana I had on hand from the year previous while the remainder of the field was seeded with seed that I bought as Montana alfalfa seed that same spring."

The situation was rather puzzling. "Did you ever notice, Mr. Dettwiler, that this part of the field which has not winter-killed always has made a shorter third crop and a much shorter fall growth than the alfalfa which has killed out so badly?" I questioned. "I certainly have noticed that very plainly," he replied, "and I have often wondered why it was that this alfalfa which has winterkilled so badly would grow from five to ten inches higher in the fall than the rest." This statement threw some bright light on the problem. "Mr. Dettwiler," I said, "The only explanation I can give you is that this short fall growing alfalfa which has come through the winter in such good condition has acted just like the Turkestan variety, while the alfalfa which winterkilled was, in all probability, the real common Montana strain. It is apparently, a very good illustration of the greater permanency and lasting qualities of the Turkestan compared with the common American variety."

These illustrations are given to show the hardiness and lasting qualities of Turkestan alfalfa but I again wish to emphasize that with us, Turkestan is still in the experimental stage especially because of our lack of information as to the climatic conditions under which the seed was raised. But it is observations like this which we feel warrant a thorough state wide trial of this variety.

Importations Cut Off Due to War

It seems that importations of Turkestan from abroad have been cut off on account of the war. At least there is little

Turkestan available in the United States at present and the price has gone up considerably. Our supply is limited but we will have sufficient to make a good thorough test. Probably millions of pounds of Turkestan seed have accumulated over in Turkestan and when the war is over it may be obtainable at a very low figure. When that time comes we ought to know fully the true value of the Turkestan.

Do Not Recommend Turkestan Alone

We do not advise sowing pure Turkestan seed because it produces a rather poor third growth but we do believe that this difficulty can be satisfactorily overcome by mixing Grimm half and half with Turkestan.

Reasons for Mixing

First, we think that the mixture of half Grimm and half Turkestan may prove almost as hardy, productive and capable of living through hard winters, which kill out common alfalfa, as pure Grimm.

Second, the mixture should make a good third crop in average years.

Third, it costs less. The mixture of half Grimm and half Turkestan will cost from ten cents to fifteen cents a pound less than pure Grimm.

Fourth, less seed is required with a mixture of Grimm and Turkestan because the plants of both of these varieties have more widely spreading crowns and roots than the common. We believe with good favorable soil conditions and preparation sixteen pounds an acre is sufficient. Where alfalfa is grown for the first time or is not easy to grow, it is better to use twenty pounds an acre—especially if weeds are unusually abundant.

Avoid Mixing Grimm with Common

We do not advise mixing Grimm with common ordinary alfalfa because the Grimm seed coming from out West is more or less crossed anyway by insects with common alfalfa growing in the same vicinity as the Grimm fields. Common alfalfa is more easily winterkilled than either Grimm or Turkestan, therefore, let us not spoil our Grimm by mixing it with the less hardy common. Turkestan with us has proven hardy and if mixed

with Grimm a good third crop should be obtained in average years which is not generally possible when pure Turkestan is grown. Surely this mixture is worth trying out.

Here Are Our Plans

We hope to have the cooperation of every member who will sow alfalfa this spring in testing out this Turkestan mixture and the Grimm. We will send at prices quoted either eight or sixteen or twenty-four pounds of pure Grimm and (with good soil preparation, enough for one-half or one or one and one-half acres) and eight, sixteen or twenty-four pounds of a half-and-half mixture of Grimm and Turkestan. Everybody ordering seed must take both kinds in any amounts above specified. We will send the seed by parcels post or express prepaid, furnish all sacks and pay all shipping expenses. All orders for seed to conduct this experimental test must be sent in before March first.

How You Can Tell Turkestan

While Grimm and common American grown alfalfa seed cannot be distinguished one from another, the Turkestan can generally be quite readily identified by the character of the seed. It either has a rough surface or a dull grayish-appearance depending upon, whether or not it has been polished. You can generally tell the difference in the roughness of imported Turkestan and Grimm or common by rubbing the seeds between your fingers. Turkestan practically always contains the ivory white seeds of Russian Knapweed which are seldom found in alfalfa seed of any other variety. They are considered harmless under our conditions.

Purity of the Turkestan

We must bear in mind that there are good and bad grades of Turkestan seed. It generally always has a good germination but the best grades will very often have just a trace of buckhorn weed seeds present. If we felt that a slight trace of this weed seed in alfalfa would cause any serious difficulty we, of course, would not be instrumental in making our proposed distribution. However, we have sown this variety containing a trace of buckhorn seeds, time and again, without ever having

found buckhorn plants appearing in the field. When buckhorn seeds are present in such very small quantities we have no fears or worry in sowing high grade Turkestan seed especially when mixed half and half with clean Grimm seed.

Adulteration Not to Be Encouraged

We do not wish to encourage adulteration or mixing of seeds by seedsmen. We believe that the farmer should do his own mixing if any should be done. Fortunately, the harmless ivory white seeds of Russian Knapweed which are practically always present in Turkestan seed makes it possible to identify this seed in a mixture or otherwise.

KANSAS SEED AS GOOD AS MONTANA

In 1914, our members very gladly cooperated in trying out Kansas grown alfalfa seed in comparison with the more expensive Montana alfalfa. These tests have now passed through three winters—that of 1915–1916 being very severe. The reports received give very strong evidence that there is little or no difference in the hardiness and yields of Montana and Kansas grown alfalfa seed. Of 114 reports only fourteen felt that the Montana stood the winters better than the Kansas. One hundred declared they could see no difference between these two strains.

These results coincide exactly with our experiments on the Station Farm. The Kansas alfalfa with us has proven in every test to be as hardy, productive and satisfactory, in every respect, as the more Northern grown alfalfa seed. This applies equally well with the Dakota and Nebraska grown alfalfa seed. This is information of vital importance. It will save thousands of dollars in the purchase of alfalfa seed, as Kansas is the largest alfalfa seed producing state in the Union and seed from there can be generally obtained at a lower figure than from any other American source.

Location Where Seed is Grown not as Important as Variety

It is quite clear that as far as hardiness is concerned, the variety of alfalfa is of far greater importance than place of growth. We do not wish to say that common alfalfa seed grown

in Arizona or New Mexico is as hardy as that produced in Kansas or Montana for our experiments with seed produced farther south than Kansas would not as yet warrant any conclusions. But it is plainly evident that such distinct varieties as the Grimm, Baltic and Cossack have an inherent hardiness, whether grown in Idaho, Kansas or Montana which make them capable of living through hard winters that kill the common ordinary alfalfa in Wisconsin which may come from seed grown in these same states.

INOCULATION CULTURES SUPPLIED BY ALFALFA ORDER

Our Association this year will supply fresh and pure bacterial cultures for inoculating alfalfa and soy bean seed. These cultures are carefully prepared by the Agricultural Bacteriology Department of the Wisconsin College of Agriculture in acre sized bottles. They will be furnished postpaid at cost price of twenty-five cents a bottle which is sufficient for treating twenty pounds of seed. Members are requested to report their experiences and success with these cultures.

OUR NEW BOOKLET "ALFALFA"

The wealth of information on alfalfa which our Association has collected during the past six years together with the experimental observations on over 600 plots of alfalfa which we have established is of such great value and importance, that your Secretary has written an eighty page booklet telling of the experiences and experiments of our members. It is written in story form and illustrated with twenty colored views and over forty other illustrations. These views talk. They tell the plain truth about alfalfa. Professor Moore says it is the best, most attractive and interesting publication on alfalfa he has ever seen. Peter Swartz, our president and the largest grower of alfalfa in Wisconsin says that every farmer should have a copy. It is an expensive publication and cost us lots of money. We are making a special price of 50 cents per copy for our members. Those who are not members may secure single copies for 70 cents and in quantities of ten or more copies at 50 cents each. The booklet is published by the Alfalfa Order. All the funds are handled by the Association—not individually.

JOIN WISCONSIN'S ARMY OF ALFALFA GROWERS

For the past three years our membership has not fallen below 800. We have at present over a thousand members. The Alfalfa Order is a mighty army of alfalfa growers, truly patriotic in the cause of greater food production. Since we began in 1911 our alfalfa acreage has doubled twice over.

WISCONSIN'S ALFALFA RECORD

In 1915 the United States Crop Bureau of Statistics credited Wisconsin with a larger tonnage production of alfalfa hay than any other state east of the Mississippi river. Our production in 1915 was 361,000 tons—more than seven times that of 1909. This is only an indication of what a good strong and live Association can do.

Help This Movement Along

Let's pull together on alfalfa and profit by each others experiences. Join the Alfalfa Order. With all the benefits and advantages we have to offer our members there is only one thing to do—be a member. Do it now.

ALFALFA PROBLEMS IN NORTHERN STATES

BY FRED L. HATCH

A physician once prescribed "animal food" for one of his patients. Calling to see him some days later, he was anxious to know how he was doing and what benefits he had derived from the new diet. He was informed by the patient that he was "getting along pretty well," that he did not mind the barley, oats and corn, but "durn" the hay.

This was probably before the days of alfalfa or before its wonderful properties were known or the many ways in which it could be made to serve the wants of man and beast. I suppose the hay referred to by the sick man was just common every day timothy, deficient in protein, the food element which makes blood and bone and muscle and gives to all strength, vigor and energy. No wonder the system revolted at so much carbonaceous food, and demanded a more balanced ration. Had the patient been given alfalfa instead of timothy there would have been no balking at hay.

The wonderful and marvelous stories of the plant have sometimes appeared to us much like plain, common everyday lies. We have laughed at what we conceived to be clever exaggerations. It is just beginning to dawn upon us that we have been amused at facts and truths and that those whom we have taken for worldly minded humorists are in reality great truth-tellers.

We are facing a crisis such as the world has never known, and we are called upon to produce more and waste less, in order that freedom may not perish from the earth.

Already:

"Our Tuesdays are meatless
Our Wednesdays are wheatless
We're getting more eatless each day.
Our homes they are heatless
Our beds they are sheetless
They're all sent to the Y. M. C. A.

"Our neighbors are treatless
Our coffee is sweetless
Each day we get poorer and wiser.
Our stockings are feetless
Our trousers are seatless
My Lord! How I do hate the Kaiser!"

The prominent and everlasting problem in maintaining high production is to keep enough nitrogen in the soil out of which to make crops and because of this the leguminous crops are the fundamental basis of high production. Feed the legumes to the soil and the soil will feed the grain crops. If there is one thing above another which should be protected by the state it is the soil. No man should have the right to destroy his farm, no man should have a right to "skin" his farm, butcher it up, and sell the hide, hoof, bone and tallow. Such a man is not a farmer but a veritable robber and should be brought to speedy justice for his sins. The man who causes one blade of grass to grow where two grew before has forfeited his title to God's broad acres, and will soon pay the penalty by being forced into some city sweat shop. To feed the world and at the same time add to the fertility of the soil is his, the farmer's, problem.

We have the plant—alfalfa is preëminently that plant. It gathers large quantities of food from the air. Its roots drill down ten to twenty and even thirty feet, getting nourishment where other plants cannot reach. It is a comparatively new crop in the United States, but it is as old as the nations of Western Asia. When our forefathers came to this new world they brought with them this unique plant and in Virginia, New York, and parts of New England Lucerne was recognized as a valuable crop, but new and fertile soils would produce crops without food from the air and the use of this soil enricher was neglected. Now barren wastes have followed in the wake of this neglect. Had they recognized the importance of this wonderful plant as we are beginning to do, those barren wastes would now be fertile fields.

Alfalfa feeds our soils and enables us to grow larger crops of grain.

Alfalfa balances all grain rations, especially corn.

Alfalfa supplies us with protein more cheaply than we can buy it in feedstuffs.

Alfalfa produces double the feed value of clover or any other

forage crop per acre. Don't farm without it and don't feed without it.

Hon. A. P. Grout of Illinois, president of the first alfalfa association of America, said that he could pay 6 per cent on \$1,000 per acre land by growing alfalfa—that one acre of alfalfa was worth 6 acres of timothy and that when corn will net \$15.00 per acre alfalfa will net \$50.00 per acre.

Further proof of its value is shown in the following experiments.

In Wisconsin we notice that alfalfa produces twice as many tons per acre as clover or timothy. In 1910 the cost of growing alfalfa was about the same as growing other hay crops, which left a profit of \$4.00 on timothy and clover but \$21.00 on alfalfa per acre. This same year there were 50 million acres of timothy and clover and 5 million acres devoted to alfalfa. Only 218 thousand acres are east of the Mississippi river, Kansas raising 1 million acres—one-fifth of the entire acreage of the United States.

In Nebraska several litters of pigs were separated into two lots; one lot was put 80 days on corn and alfalfa pasture then were fed on corn and alfalfa hay 100 days. One lot was fed on corn alone with plenty of good water, the same as the other. Six months later these pigs were killed. The ones having corn and alfalfa averaged 185 pounds each, and the ones having corn alone 75 lbs. each. The ones having corn alone requiring 17% lbs. of corn for each pound of gain; the ones having corn and alfalfa required 5 97/100 lbs. of corn for each pound of gain.

"Time comes when each acre must yield without flaw
Production must double in Nature's grim law.
The cities will teem with vast millions that toil,
And life with its hopes must depend on the soil.
What methods more wise could the farmer combine,
Than raising alfalfa and fattening swine."

The Illinois Experiment Station conducted an experiment feeding dairy cows. The cows were divided into two lots; Lot 1 was fed for 9 weeks on alfalfa, Lot II on bran. They had other feeds too, but in similar quantities. At the end of 9 weeks the feeds were changed. When Lot II was fed alfalfa, the milk yield rose from 460 to 520 lbs. The total milk production for the 18 weeks shows a balance of 375 lbs. in favor of alfalfa feed

At the Nebraska Experiment Station a number of calves were divided into 2 lots. Lot I was fed prairie hay and grain (prairie hay has the same feeding value as timothy). Lot II was fed on alfalfa and grain. To make 1000 pounds gain required 16,700 pounds prairie hay vs. 10,000 pounds alfalfa; 3,000 pounds grain vs. 1,600 pounds of grain. The money cost for prairie hay and grain was \$45.10, and for alfalfa and grain was \$28.20.

Ontario, Canada, furnishes an experiment of how alfalfa enriches the land. Wheat planted after alfalfa yielded 61 bushels per acre, as compared to 42 bushels on timothy sod.

To grow alfalfa we must have well-drained, sweet soil. Many of the soils in Wisconsin and northern Illinois are naturally well-drained, being underlaid with loose limestone and were formerly all sweet soils. Many years of grain growing have exhausted the lime in the surface of the soil, so that from 2 to 5 tons of lime per acre must be applied before alfalfa can be grown most successfully. A well-prepared, firm seed bed, free from weeds is the next requisite, the young alfalfa plant being very delicate. All alfalfa land should be inoculated with nitrifying bacteria. We can do this by spreading soil from an old alfalfa field or 'sweet clover patch upon our seed bed, and immediately harrowing to hide bacteria from sun.

The better and less expensive way is to use a very weak solution of glue. Sprinkle lightly over the seed in a shady place, then with a fine sieve sift a very small quantity of dirt taken from near the roots of sweet clover or alfalfa that is known to be inoculated. You can tell whether or not the plants are inoculated by the little nodules that grow on the roots early in the season.

When alfalfa is ready to cut it will generally show more or less bloom, but the thing to watch is the starting of the second growth. When the new shoots at the crown or base of the plant are about $1\frac{1}{2}$ to 2 inches high is the time to cut. Set the mower high enough so as not to clip off the tops of these shoots. If cut earlier you are likely to weaken the plant and lose growth on the first crop. If you cut later you are likely to cut the new shoots and thus retard the growth of the second crop. Be careful not to cut too late in the fall. There should be a growth of at least 8 inches high left to protect the crowns of the plants in the winter. At times no shoots appear and no blossoms, the lit-

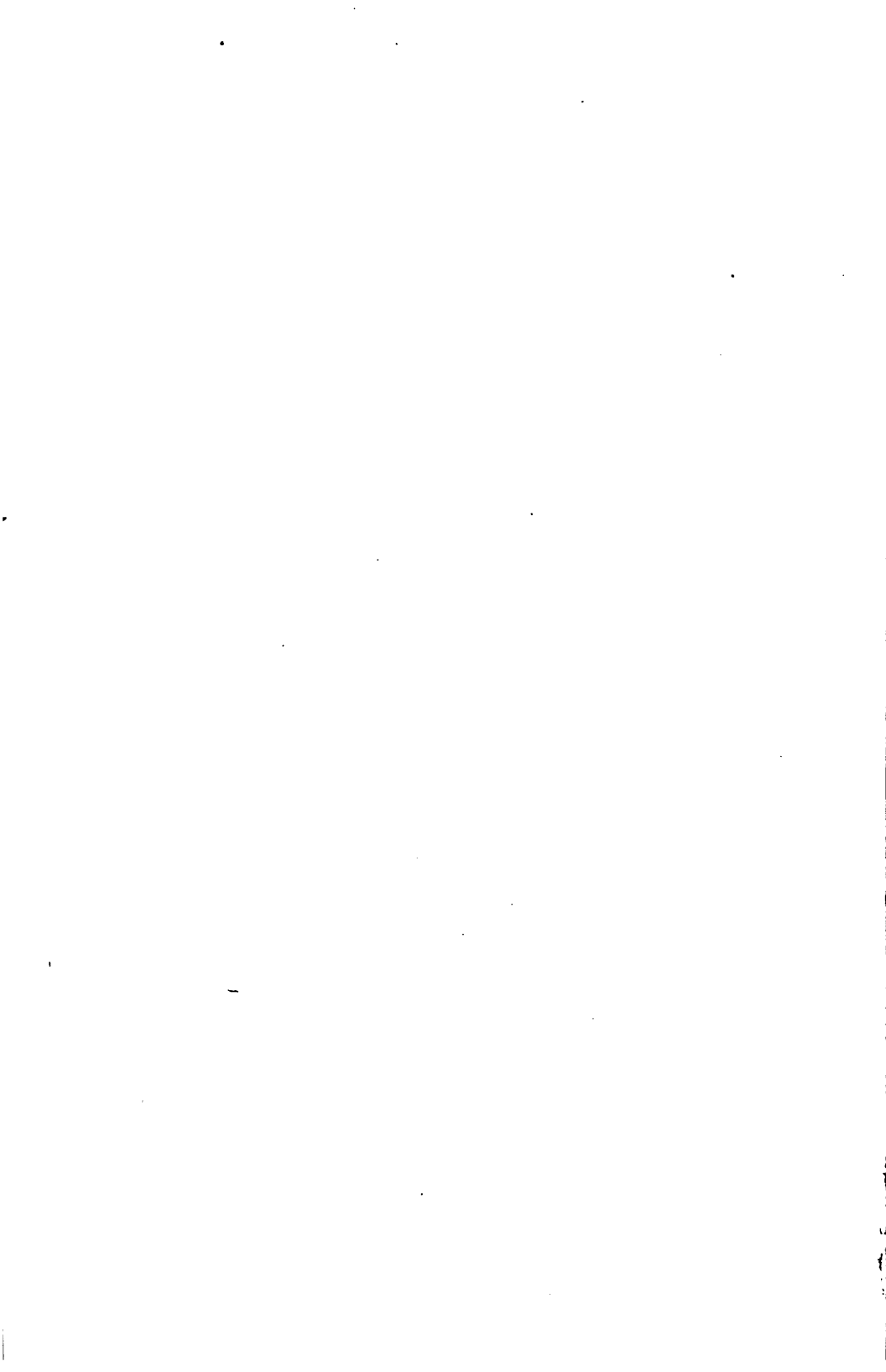
the plants being rusty or sickly. It is best at such times to cut the plant and thus force it to make a new healthy growth.

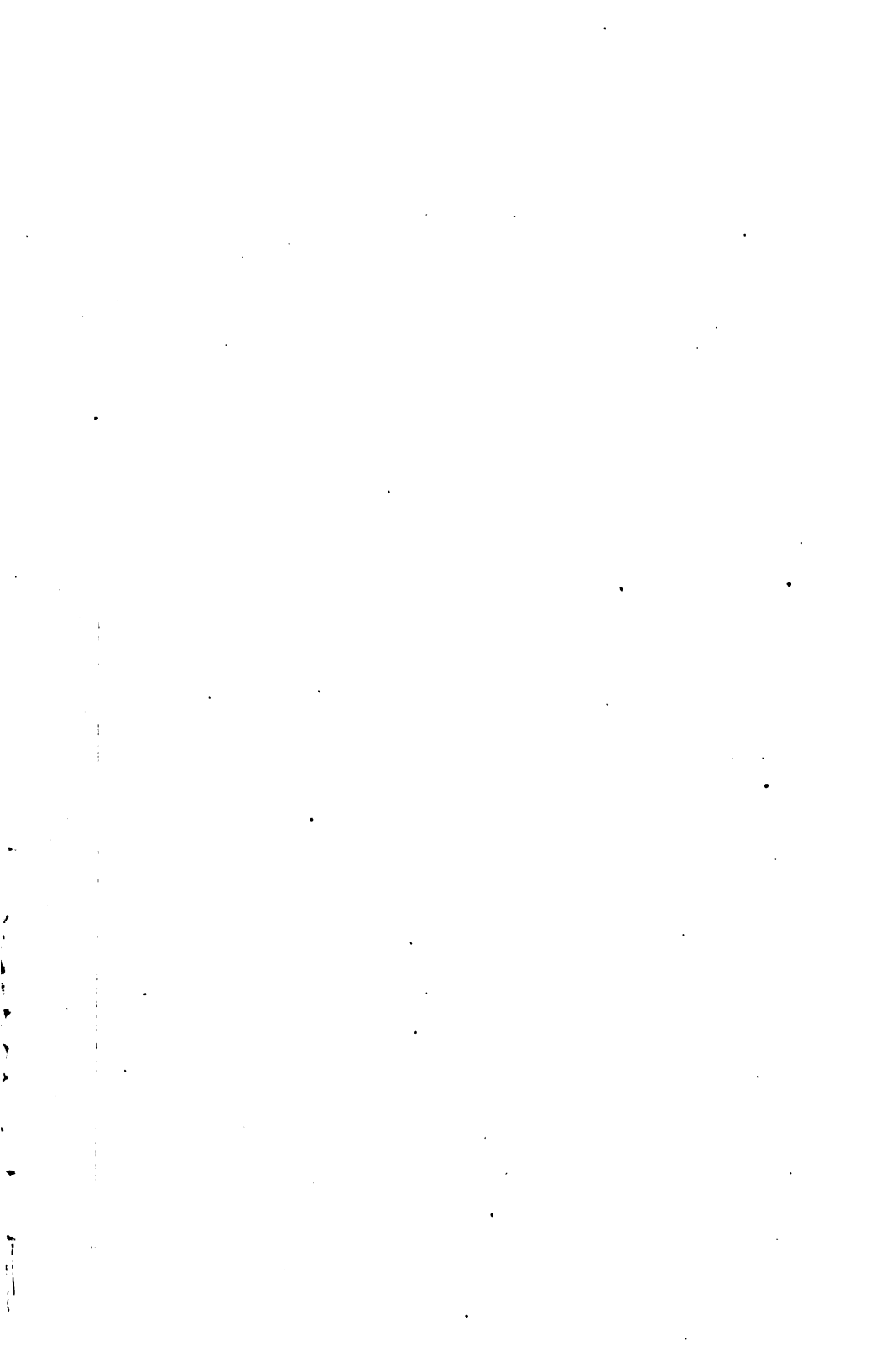
Only nine per cent of the land left in this country is capable of being cultivated, hence we must have more intensive rather than extensive farming. We must make our present acres double our production in order to feed the world. All necessary information and instruction concerning culture and care of alfalfa may be had for the asking from our agricultural colleges and experiment stations.

In my opinion the wonderful plant, alfalfa, is to revolutionize agriculture, country life, country schools, country churches. It will transform poor, hilly country wastes into fields rich in plant food. It will enable the tenant to become the landowner. It drills into the earth and reaches up into the air for sunshine and food, which it transmits into cash for its fortunate owner. No other plant performs such enormous labors for the human race. It will solve the problem of high cost of living. Nature did a choice piece of work when she presented the alfalfa plant to the world. Doubtless she could have done a better job—but truly she never did.

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